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Theism, Bayes's theorem and religious experience : an examination of Richard Swinburnes's religious epistemology

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Theism, Bayes's Theorem and Religious Experience: an Examination of Richard Swinburne's Religious Epistemology

Thesis submitted for the degree of Ph.D.

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King's College London
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Abstract

The aim of this thesis is to suggest a way of employing Bayes's theorem and religious experience in the justification of theism that is alternative to Richard Swinburne's proposal. In Chapter 1, I provide a general description of Swinburne's approach to the justification of theism in relation to the way he understands scientific inductive reasoning. Chapter 2 contains the main criticisms of that attempt, suggesting that if they harm Swinburne's proposal, this does not mean the whole Bayesian method should be rejected in this matter. Chapter 3 is devoted to criticising the simplicity principle, which is crucial to Swinburne's Bayesian approach. Chapter 4 turns to the other pillar of Swinburne's programme to the justification of theism, that is, religious experience. In it, I describe Swinburne's account of this phenomenon, and hold that there are formal reasons for rejecting the role he devotes to it in his defence of theism. Chapter 5 continues with the criticisms of Swinburne's argument from religious experience, in view of the existing literature. In Chapter 6, Alston's approach to religious experience is analysed and interpreted in a minimalist way. The suggestion drawn from that reading is that this phenomenon could be used in a Bayesian discussion of the probability of theism to factor in the theist's initial probability of the hypothesis that there is a God. Chapter 7 analyses the intersubjective account of probability, in view of the defects displayed both by the logical and the subjective theories. In the final chapter I outline my application of the intersubjective theory of probability to the Bayesian analysis of the justification of theism, distinguish it from Swinburne's proposal and suggest that my account has a particular place among the different methods available in today's epistemology of theism.

CONTENTS

ABSTRACT	2
ACKNOWLEDGEMENTS.....	6
NOTATION	7
INTRODUCTION.....	8
CHAPTER 1 – SCIENTIFIC REASONING AND THE HYPOTHESIS OF THEISM..	13
1. RESTORING THE INTELLECTUAL RESPECTABILITY OF THEISM	13
2. BAYESIANISM AND SIMPLICITY AS UNIVERSAL PATTERNS OF RATIONAL BELIEF	16
2.1 <i>Bayesianism and the logic of induction</i>	16
2.2 <i>Prior probability and simplicity</i>	20
3. ASSESSING THEISM AS AN EXPLANATORY HYPOTHESIS	26
3.1 <i>What kind of explanation is theism?</i>	26
3.2 <i>The application of Bayes’s theorem and simplicity principle to theism</i>	28
4. SWINBURNE’S EPISTEMOLOGICAL POSITIONS IN THE JUSTIFICATION OF THEISM	33
CHAPTER 2 – SOME PROBLEMS WITH THE APPLICATION OF BAYESIANISM AND SIMPLICITY TO THEISM	40
1. CAN WE USE BAYES’S THEOREM FOR ASSESSING THEISM?	42
1.1 <i>A general inadequacy in the use of Bayesianism in religion</i>	43
1.2 <i>Bayes’s theorem and the problem of evil</i>	45
1.3 <i>Swinburne’s likelihood inferences</i>	47
2. CAN WE ATTRIBUTE A PRIOR PROBABILITY TO THEISM?	51
3. IS THEISM REALLY A SIMPLE HYPOTHESIS?.....	55
CHAPTER 3 – SIMPLICITY AS EVIDENCE OF TRUTH.....	63
1. SOME CLASSIC OBJECTIONS AGAINST SIMPLICITY AS AN EPISTEMOLOGICAL PRINCIPLE.	64
2. SWINBURNE’S POSITION REGARDING SIMPLICITY IN VIEW OF ITS CRITICS.....	72
3. NEW OBJECTIONS AGAINST SWINBURNE’S PRINCIPLE OF SIMPLICITY.....	79

4. SIMPLICITY AND BAYES'S THEOREM	90
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CHAPTER 4 – RELIGIOUS EXPERIENCE AND BAYESIAN CONFIRMATION 99

1. RELIGIOUS EXPERIENCE AND ITS EVIDENTIAL VALUE	100
<i>1.1. The character of religious experience</i>	<i>100</i>
<i>1.2 The principle of credulity.....</i>	<i>103</i>
<i>1.3 The principle of testimony</i>	<i>107</i>
<i>1.4 Justifying religious experience with the credulity and testimony principles.....</i>	<i>108</i>
2. RELIGIOUS EXPERIENCE AS AN ARGUMENT FOR THE BEST EXPLANATION.....	114
3. RELIGIOUS EXPERIENCE AND THE BALANCE OF PROBABILITY	118

CHAPTER 5 – PROBLEMS WITH SWINBURNE'S ARGUMENT FROM RELIGIOUS EXPERIENCE 135

1. THE ANALOGY BETWEEN RELIGIOUS EXPERIENCE AND SENSE PERCEPTION	135
2. NATURALISTIC EXPLANATIONS OF RELIGIOUS EXPERIENCES	141
3. RELIGIOUS PLURALISM AND THE IDENTIFICATION OF GOD	147
<i>3.1 The problem of religious pluralism</i>	<i>147</i>
<i>3.2 The identification of theistic perceptions.....</i>	<i>154</i>

CHAPTER 6 – MYSTICAL PERCEPTION AND DOXASTIC PRACTICE..... 163

1. ALSTON AND MYSTICAL PERCEPTION AS A RELIABLE DOXASTIC PRACTICE	166
<i>1.1 The nature of mystical perceptions.....</i>	<i>166</i>
<i>1.2 The justification of perceptual beliefs and the doxastic practice approach</i>	<i>169</i>
<i>1.3 The justification of mystical perception beliefs.....</i>	<i>177</i>
2. ALSTON'S APPROACH AND SWINBURNE'S DIFFICULTIES	179
<i>2.1 Naturalistic explanations and the Christian mystical doxastic practice.....</i>	<i>180</i>
<i>2.2 CMP and the analogies with sense perception</i>	<i>182</i>
<i>2.3 The problem of religious diversity.....</i>	<i>184</i>
3. ALSTON AND HIS OWN CRITICS: THE DEGREE OF JUSTIFICATION OF CMP.....	189
<i>3.1 The checking system of CMP.....</i>	<i>190</i>
<i>3.2 CMP's degree of justification.....</i>	<i>193</i>

CHAPTER 7 - SWINBURNE AND THE INTERSUBJECTIVE THEORY OF	
PROBABILITY	202
1. SWINBURNE AND THE LOGICAL THEORY OF PROBABILITY	202
<i>1.1 The logical theory and Swinburne's correct criteria of induction.....</i>	<i>204</i>
2. THE SUBJECTIVE THEORY OF PROBABILITY	211
3. ARGUMENTS AGAINST SUBJECTIVE BAYESIANISM	225
<i>3.1 Some of Swinburne's criticisms of subjectivism</i>	<i>225</i>
<i>3.2 The limits of convergence theorems.....</i>	<i>228</i>
<i>3.3 Deborah Mayo and the rejection of Bayesianism.....</i>	<i>232</i>
<i>3.4 Bayesianism as an account of induction.....</i>	<i>235</i>
<i>3.5 The old evidence problem.....</i>	<i>238</i>
4. THE INTERSUBJECTIVE THEORY OF PROBABILITY	242
 CHAPTER 8 – INTERSUBJECTIVE PROBABILITY AND THE EPISTEMOLOGY	
OF THEISTIC BELIEF	252
1. INTERSUBJECTIVE PROBABILITY AND THEISM.....	252
2. THE INTERSUBJECTIVE APPROACH AND SWINBURNE.....	264
3. THE INTERSUBJECTIVE APPROACH AND THE EPISTEMOLOGY OF THEISTIC BELIEF	275
SUMMARY AND CONCLUSION.....	294
 BIBLIOGRAPHY	 305

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Notation

In the formal expressions used in this thesis, the following notation will be employed.

Signs

Conjunction ('and') will be expressed by '.' (as in ' $e.k$ ' for ' e and k '), but in some quotations conjunction is also symbolised by ' \wedge ' and '&'.

Negation ('not'): ' \neg '.

Multiplication: ' \times ', to be distinguished from ' x ', which designates a variable.

Common mathematical signs such as ">", "=", and "+" keep their usual meaning.

Expressions

' $P(e)$ ' is to be read as 'the probability of e '.

' $P(e/h)$ ' means 'the probability of e given h '.

$\frac{P(e/h.k)}{P(e/k)}$: 'the probability of e given h and k divided by the probability of e given k '.

Introduction

When I left the sunny and dry Brasília for the not-so-sunny and not-so-dry London in 1998, my intention was to embark on a philosophical research on the traditional problem of the relationship between religious faith and argumentative reason. Given that in Brazil there was no possibility of obtaining doctoral training in the epistemology of religion, I applied for a grant to study in Britain, since the analytic approach seemed to me the most appropriate to the kind of discussion I was interested in carrying out. My idea was to analyse the relationship between the specificity of religious background and the universality of the claims of scientific and philosophical rationality in the way religious beliefs are said to be justified.

The initial method chosen to delimit this huge subject proved unworkable. I intended to compare the approaches of two leading contemporary philosophers of religion, namely Richard Swinburne and Alvin Plantinga. My suggestion was that while the former stressed the need to comply with general requirements and patterns of rationality to justify the respectability of religious belief, the latter argued that the religious believer was right in taking some basic tenets of his creed as basic, even if what counts as basic belief was not universally acceptable. The project was still too wide and hardly feasible, since Swinburne and Plantinga are two very complex and prolific authors. In addition, Plantinga was already developing some significant changes in his approach, which would make my task even harder.

I decided then to limit my research to Swinburne's ideas. Apart from the enormous recognition his work has in today's analytic philosophy of religion, the rigour and clarity of his approach to the epistemology of religion seemed to me important qualities that I should display in my own proposals in the area. In addition,

the choice of Swinburne helped me to narrow down my subject further. Instead of the epistemology of religion, this thesis will deal with the particular belief that there is a God understood as the common object of worship in the great monotheistic religions of Judaism, Christianity and Islam. In other words, my interest here is with the epistemology of the belief that there is a God who is an incorporeal person, omnipotent, omniscient, maximally good, eternal and worthy of worship.

Another reason for concentrating my analysis on Swinburne and which helped me to clarify my project was the concept of justification. Swinburne considers the notion of justified belief from the point of view furnished by probability theory. In this account the strength with which I believe a proposition p is measured by a probability value. My degree of belief in p is justified if it is grounded in adequate and sufficient evidence. If I believe p strongly I must believe that p is more probable than not or, at least, that p is more probable than any other available alternative in view of the evidence I know. For the probabilistic approach, the degree of belief which theists have in the hypothesis that God exists is justified in the case that theism is more probable than not, given evidence and considering the existing rival accounts of this evidence.

All this probabilistic approach to justification remits us to Bayes's formula, a theorem of the probability calculus that is crucial to Swinburne's discussion of the justification of theism. In fact, Swinburne is not the first philosopher to use probability reasoning to understand religious matters. Right at the beginning of the history of probability as a mathematical branch in the 18th century, a disciple of Thomas Bayes, Rev. Richard Price used his master's contributions in the area to refute David Hume's criticisms of the evidential value of miracles (see Earman 2000). Yet, even if Swinburne's use of probabilistic tools to discuss religious matters is not

innovative as such, his application of the formal apparatus furnished by the probability calculus to the justification of theism is by far the most complete and accomplished to the date.

However, despite the importance of his contribution to the problem, Swinburne's position has not encouraged attempts to develop the Bayesian approach in the epistemology of theism. Many criticisms were made of his view that for a belief to be justified it must be guided by correct inductive criteria, valid formal inferential rules, and public and universally acceptable evidence, a position William Abraham calls 'hard rationalism' (see Abraham 1985). In my research, I was able to discover that Swinburne's hard rationalism is associated with a particular theory of probability – the logical theory – and that criticisms of his probabilistic approach to the justification of theism do not mean this same method cannot be employed fruitfully if based on a different theory of probability.

Moreover, the way Swinburne deals with religious experience in his approach also seemed wanting to me. My main qualms were related with treating that phenomenon as a public piece of evidence, on a par with other data employed by him in his defence of the justification of the belief in God. My intuitions were that religious experiences are intrinsically related to a particular religious conceptual framework, and that to draw from them even an inductive argument addressed to all was a very difficult enterprise, if feasible at all. In this particular, William Alston's position seemed to me a more promising approach to religious experience, although Alston works within a different understanding of justification.

In the course of this research on Richard Swinburne's suggestion for the justification of theism, my own proposal started to emerge. I wanted to preserve the Bayesian approach, although recognising its limits as an account of scientific

reasoning, but not to get involved in Swinburne's hard rationalism. It seemed to me that the demand for evaluating the probability of theism only according to impersonal and universal criteria was too strong, and in fact unnecessary for a programme in the area that aimed to discuss the question in terms accessible both to theists and atheists, and that postulated that this question could be resolved through argument. As a result, I took from Donald Gillies his intersubjective theory of probability (see Gillies 1991) and suggested a different way of using religious experience in the Bayesian approach to the justification of theism, based on a particular reading of Alston's contribution. In sum, the present thesis does not intend to argue either that belief in God is justified or unjustified. Its purpose rather is methodological. Based on Richard Swinburne's account, it aims to suggest an employment of the Bayesian epistemology and the phenomenon of religious experience in ways alternative to this philosopher.

In order to achieve its goal, the present work is divided into eight chapters. In Chapter 1, I provide a general description of Swinburne's proposal for the justification of theism in relation to the way he understands scientific inductive reasoning. Chapter 2 brings together the main criticisms of that attempt, suggesting that if they harm Swinburne's proposal, this does not mean the whole Bayesian method should be rejected in this matter. In addition, I hold that any criticism of Swinburne's approach can only be successful if it analyses his principle of simplicity, which is the basis for the answers he gives to his critics. Consequently, Chapter 3 is devoted to a discussion of the simplicity principle, pointing to several problems related to its definition, application and justification. Chapter 4 turns to the other pillar of Swinburne's programme for the justification of theism, that is, religious experience. In it, I describe Swinburne's account of this phenomenon, and hold that there are formal reasons for rejecting the role he devotes to it in his defence of theism.

Chapter 5 continues with the criticisms of Swinburne's argument from religious experience, arguing that any hopes for keeping it as an inductive compelling reason in favour of theism are now very dim. In Chapter 6, Alston's approach to religious experience is analysed and interpreted in a particular way. The suggestion drawn from that reading is that this phenomenon could be used in a Bayesian discussion of the probability of theism to factor in the initial probability the theist gives to the hypothesis that there is a God. Since this suggestion is incompatible with Swinburne's theory of probability, Chapter 7 proposes a different account of this subject, in view of the defects displayed both by the logical and the subjective theories of probability. In the final chapter I outline my application of the intersubjective theory of probability to the Bayesian analysis of the justification of theism, distinguish it from Swinburne's proposal and suggest my account may have a particular place among the different methods available in today's epistemology of theism.

In the schematic proposal I put forward at the end, there is shown to be a way to deal with the relationship between the particularity of religious faith and the universalistic requirements of argumentative rationality, which was the initial reason that brought me to London. I hope it becomes a fruitful programme to be developed later on, as fruitful as it was for me to stay in Britain (despite the weather).

Chapter 1 – Scientific Reasoning and the Hypothesis of Theism

The suggestion I will formulate on how to employ religious experience and Bayes's theorem in the justification of the belief in God is based on a critical discussion of Richard Swinburne's epistemology of religion. In order to do so, I need to start by describing Swinburne's programme for the justification of theism, the claim that there is a personal God that is the sustainer and creator of the universe, who is omnipotent, omniscient, perfectly good, eternal and worthy of worship. In this chapter I will firstly present the philosophical context of his proposal and its purpose. Then I move on to give an account of the main elements of Swinburne's epistemology and how they are applied to theism as an explanatory hypothesis. Based on this description, I will analyse critically the limits of Swinburne's attempt in subsequent chapters.

1. Restoring the Intellectual Respectability of Theism

If philosophical inquiries always attempt to solve a theoretical problem, perhaps we could formulate the questions behind Swinburne's philosophy of religion as 'Would belief in God be incompatible with a highly educated background?' and 'Could theism be rationally acceptable in an age where scientific theoretical activity stands as the paradigm of justified belief?'. Richard Swinburne's programme for justification of theism aims to answer 'no' to the first question and 'yes' to the second. Having the work of Thomas Aquinas as a model for approaching the problem of the rationality of the belief in God, Swinburne intends to show that theism is an intellectually respectable belief. As Aquinas did in the thirteenth century, Swinburne

now sets himself the task of using the best intellectual tools of scientific thought in his time to show that belief in God is not the groundless last resort of ill-educated people, but a belief that can be justified according to the most rigorous forms of scientific reasoning and the recognised results of scientific inquiry (see Swinburne 1994:8).

However, two striking differences between Swinburne and Aquinas's context may help to explain better what constitutes the proposal of the former. On the one hand, in contrast with Aquinas's time when to be an educated person in Europe was almost synonymous with being part of the church, Swinburne acts in an environment predominantly unreceptive to religious belief. Not only has British culture and society become increasingly secularised since the end of Second War, but also the academic circles in which Swinburne moves seemed to continue the trend started in the nineteenth century of regarding with suspicion everything related to beliefs not grounded either in empirical observations or formal reasoning.

Moreover, the quest for rational justification and dialogue with scientific thought had lost the important place it used to have traditionally in Christianity. The prevailing tendency in Christian theology in the post-war period had become mostly irrationalistic and fideistic, following the influence of Karl Barth and Søren Kierkegaard. This retreat into fideism, in Swinburne's view, is not only a demonstration of intellectual laziness but also a reinforcement of the idea that belief in God has no room in an academic world where natural science is the most credible theoretical enterprise.

The main obstacle Swinburne had to face was that according to the epistemology and philosophy of language prevalent in the 1950's, theism could not pass the tests required by a scientific culture. As a result, the only way out for his

programme was to propose an alternative view as to the standards for an acceptable scientific theory.

Swinburne noticed in his epistemological studies that, contrary to what verificationism postulated, a scientific hypothesis does not owe its meaning and justification to its empirical verification. Most propositions of theoretical physics, for example, given their highly abstract character, would not pass the verificationist criterion of justification, and most terms and expressions in current use in natural science, such as ‘electron’ and ‘natural selection’, would be meaningless if verificationism were right. Swinburne then remarked that in scientific activity, ‘verified’ did not mean ‘conclusively verified’, but ‘confirmed or supported by evidence or argument’, and that the meaning of a proposition was not given by its empirical content (see Swinburne 1994:3f).

If that really is the case, there is no reason for great metaphysical theories, including Christian theism, not being considered meaningful and justified. As a result, Swinburne claims, ‘once I had seen this, my programme was in place: to use the criteria of modern natural science, analysed with the careful rigour of modern philosophy, to show the meaningfulness and justification of Christian theology’ (Swinburne 1994:5). In other words, the aim of one of the most important philosophical programmes to justify the belief in God in analytic philosophy of religion is to establish a parallel between theism and scientific hypotheses, postulating that the former could be considered rational according to the same criteria used to assess the latter. In order to carry out this objective, Swinburne needed to clarify what he meant by ‘criteria of scientific reasoning’.

2. Bayesianism and Simplicity as Universal Patterns of Rational Belief

As I mentioned above, for Swinburne, a typical scientific hypothesis is not verified directly through observation but may be confirmed by evidence. The difference is that instead of confirmation being a direct relationship between hypothesis and experience, what is involved in scientific theoretical activity to him is an assessment of a set of propositions – the theory – on the basis of another set of propositions accounting for the evidence available. In other words, the extent to which a scientific hypothesis should be rationally held given the phenomena it aims to explain is fundamentally a logical matter, that is, a matter of relationship between sets of propositions.

2.1 Bayesianism and the logic of induction

The characterisation of the evaluation of scientific hypotheses as a logical problem does not mean for Swinburne an account of scientific reasoning by means of deductive logic, as proposed by Popper, for example. Swinburne understands science as a typical inductive enterprise (see Swinburne 1991:6), and postulates that the best logical account of this activity is provided by Bayesian confirmation theory. Bayesian confirmation theory sees the relationship between hypothesis and evidence as a matter of probability whose basic constraints are provided by the probability calculus, particularly one of its theorems: Bayes's formula. Bayes's formula, more commonly known as 'Bayes's theorem', is named after Rev. Thomas Bayes who in 1763 submitted a paper to the Royal Society in which he defended the importance of considering prior probabilities in the calculation of the chance that a certain situation

might obtain¹. In other words, in order to calculate the probability of a certain occurrence happening, we need to take account of its probability in view of previous happenings. This idea was later on formalised in mathematical terms, and among the many forms the theorem has, the following one will be particularly important for us:

$$P(A/B) = \frac{P(B/A)}{P(B)} \times P(A)$$

In this formula, the probability of event A happening in view of event B is given by the prior probability of A multiplied by the result of the division of the likelihood of A (the probability of B given A) by the prior probability of B .

Mathematically speaking, Bayes's theorem is not controversial, since it is easily deducible from the third axiom of probability calculus – known as the law of multiplication – as follows:

$$P(A.B) = P(A/B) \times P(B) \text{ (axiom 3)}$$

$$P(B.A) = P(B/A) \times P(A) \text{ (axiom 3)}$$

$$\text{But } P(A.B) = P(B.A) \text{ (by commutation)}$$

As a result, $P(A/B) \times P(B) = P(B/A) \times P(A)$, from which we have Bayes's theorem as above.

However, the application of this formula of probability calculus to the relationship between evidence and hypothesis, as defended by Swinburne, is not accepted by some authors. Some of this controversy will be reported in Chapter 7, but I will follow in this thesis Swinburne's postulation that Bayes's theorem also covers that epistemic relationship, a position generally known as Bayesian epistemology, or simply Bayesianism. According to Bayesian epistemologists, the

¹ See Thomas Bayes (1958).

probability that a hypothesis h explains a certain set of phenomena e will be given by the product of the prior probability of h ($P(h)$) and the explanatory power of h over e ($P(e/h)/P(e)$) in a way that corresponds to Bayes's theorem as expressed above if we substitute A for h and B for e :

$$P(h / e) = \frac{P(e / h)}{P(e)} \times P(h)$$

Probabilities are basically proportions. Bayesian epistemic probabilities take into account the proportion a certain hypothesis has of being true in relation to alternative explanations of the same set of phenomena. In this proportional evaluation two main elements must be considered both in relation to the hypothesis in question and in relation to its alternatives, namely the probability of each of the hypotheses in themselves (the prior probability of the respective explanation) and the probability of the phenomenon in relation to every single hypothesis under consideration (the likelihood of each hypothesis given evidence). This idea of Bayesian epistemic probability as a result of a comparative proportion looks clear in Laplace's expression of Bayes's theorem (see Howson & Urbach 1993:28), which reads as follows:

$$P(h_k / e) = \frac{P(e / h_k) \times P(h_k)}{\sum P(e / h_i) \times P(h_i)}$$

In Laplace's formulation, the probability of a certain hypothesis h_k as an explanation of evidence e is a result of the proportion between the product of the probability of e in view of h_k and the prior probability of h_k and the sum of the same factors (probability of e given alternative explanations h_i and the prior probability of the different possible hypotheses h_i) considered for the whole set of alternative explanatory hypotheses of e . The conditions for Laplace's version of Bayes's theorem are that the set of alternative hypotheses be exhaustive (i.e. its sum be equal to 1), that each alternative be incompatible with the others (i.e. if one is true the others

are false) and that the prior probabilities of e and each alternative hypothesis considered be not zero.

Let us take an example to clarify these concepts². Think of a doctor attempting to evaluate the probability of a certain diagnosis (a typical explanatory hypothesis) of a given set of symptoms displayed by a patient. Let us consider for didactical reasons a set of symptoms that has proved to be associated with only two diseases, say bronchitis and pneumonia. Let us admit that the incidence of pneumonia is much rarer than bronchitis, say 100 times less frequent according to medical records available. In this case, the prior probability of the patient having bronchitis instead of pneumonia is considerably higher. In our example, bronchitis occurs 100 times more frequently than pneumonia. Mathematically speaking, $P(Br) = 100/101$ and $P(Pn) = 1/100$. The fact that pneumonia is a comparatively rare disease, however, does not mean that bronchitis is the best diagnosis for the patient in question. The initial disadvantage of pneumonia being the best diagnosis for the case may be inverted by a probability or degree of expectedness of the set of symptoms borne by the patient in view of pneumonia that is higher than the one on the assumption that he has bronchitis. Let us say the patient manifests a symptom that occurs in 1 out of 2 patients with pneumonia but only in 1 out of 500 with bronchitis, respectively $P(e/Pn) = 1/2$ and $P(e/Br) = 1/500$. Applying these figures to the formula above, the probability of pneumonia being the correct explanation for what is happening with the patient is $5/7$, which means that it is more than 70% probable that the case in question is pneumonia and not bronchitis.

In formal terms, we have:

² The following example is based on Bartholomew 1984:52ff.

$$P(Pneumonia / evidence) = \frac{P(Pneumonia) \times P(evidence / Pn)}{P(Pn) \times P(e / Pn) + P(Bronchitis) \times P(e / Br)}$$

$$P(Pn / e) = \frac{1/100 \times 1/2}{(1/100 \times 1/2) + (100/101 \times 1/500)}$$

$$P(Pn / e) = \frac{5}{7} \quad \text{or} \quad 70\%$$

Bayesianism is then a theory that states how to assess the rationality of belief in a hypothesis in relation to its alternatives in a context of uncertainty, that is when the explanation is neither absolutely true nor absolutely false. Bayesian epistemic probability is then the measure of the degree of belief in an uncertain proposition. This assessment is generally done in an inductive way so that recorded past results serve as bases for an estimation of the probability of the hypothesis in question in order to explain a certain set of phenomena. The doctor in our example would be much more rational in believing that the patient has pneumonia instead of bronchitis. Yet, this considerable higher probability does not mean certainty. In the end, the patient may be included in the small group of people who have symptoms that are more characteristic of pneumonia but that in fact have bronchitis. In this last case, can the doctor be blamed for misdiagnosis? Of course he made a mistake, for he asserted the patient had pneumonia and this one turned out to have bronchitis, but he cannot be blamed for having chosen the diagnosis irrationally. If he considered all the evidence available and opted for the most probable explanation in relation to them, the Bayesians say, he was plainly justified in his diagnosis.

2.2 Prior probability and simplicity

In a Bayesian assessment of a hypothesis, then, there are two major elements to be considered. The first one may be called explanatory power and is the degree to

which the hypothesis h we are considering explains a phenomenon e . According to the theorem, the explanatory power of a hypothesis h in explaining an occurrence e is higher the more h makes e probable or expected (i.e. the higher is the value of $P(e/h)$) and the less e is probable in itself (i.e. the lower is the value of $P(e)$). In other words, the more a theory makes us expect a phenomenon whose occurrence would be otherwise unlikely the more this theory explains this phenomenon. The second element we take into account in a Bayesian evaluation of a hypothesis h is its prior probability $P(h)$, which is prior to the consideration of how much the evidence adds to the probability of h .

In a comparative assessment, prior probability is sometimes the crucial element in deciding which is the most probable explanation of a certain phenomenon when there are a great number of alternatives that equally explain the facts. This point touches upon what is generally known as the ‘curve fitting problem’ in epistemology (see Swinburne 1996: 26f), which can be formulated the following way: the same set of points in a graph expressing the details of a certain phenomenon, for example, can be connected in infinite different ways. It can be a straight line, a parabola or any other kind of curve. As long as they all describe the points, they are all equivalent from the point of view of explanatory power, and we have no means of selecting the best alternative in view of this criterion. The way to sort out this indeterminacy, according to Bayes’s theorem, is by assessing the rival theories in terms of their prior probability.

According to Swinburne, there are three main objective criteria for attributing a prior probability to a hypothesis (Swinburne 1991:52ff). Firstly, it depends on how much h fits well with empirical knowledge we have in other fields, i.e. with our background knowledge. In other words, the more the behaviour of the entities and

occurrences postulated by h is similar to the behaviour of objects and happenings of the same kind in other areas, the higher the prior probability of h . For example, if an anthropologist proposes a theory of social interaction to explain the political behaviour of a certain tribal group and if his hypothesis diverges too much from the knowledge accumulated about this group and political activity in general, his theory will have a low prior probability in light of background knowledge³.

Secondly, the prior probability of a hypothesis h depends on its scope, i.e. on the range of phenomena h is intended to cover. In Swinburne's view, the larger the scope, the lower is the prior probability of the theory, since it will be more exposed to instances of refutation. The more a hypothesis says about a set of objects and the ampler is this set the more risk we run of a mistake (see Swinburne 1991: 52).

The third criterion defining the prior probability of a hypothesis is simplicity. According to Swinburne, 'a theory is simple in so far as it postulates few mathematically simple laws holding between entities of an intelligible kind. By a theory postulating "entities of an intelligible kind", I mean that it postulates entities of a kind whose nature and interactions seem natural to us' (1991:52). For Swinburne, simplicity is the most important element of the three when it comes to evaluating large-scale theories like theism, which is intended to explain the existence of the universe itself. Crucially, in this type of theory no empirical evidence is left in the background knowledge. The reason for this is that there are no neighbouring fields according to which we could assess the fit with background knowledge. As regards scope, the reasons Swinburne presents for not considering it relevant are not very clear. He seems to say that this criterion has usually not been as important in the

³ Certainly, if his theory is capable of explaining data that existing knowledge has been incapable of accounting for or if there is new information about the group that the explanation is able to cover, the

history of science as simplicity (see Swinburne 1991:54 and 282 and 1996:106). We will return to this issue later on. For now, it is enough to say that for Swinburne, in the evaluation of theories with the same explanatory power, scope and fitness with empirical background knowledge are much less important than simplicity.

Swinburne argues, then, that not only has simplicity a very important role in scientific reasoning directed at selecting which is the best theory to explain a certain set of phenomena, but also that simple theories are more probably true than complex ones. This idea leads him to use the principle of simplicity, which constitutes a crucial criterion for assessing the probability of a hypothesis in his epistemology, as an addition to Bayes's theorem⁴. The principle of simplicity in Swinburne's words could be stated as follows:

[...] other things being equal – the simplest hypothesis proposed as an explanation of phenomena is more likely to be the true one than is any other available hypothesis, that its predictions are more likely to be true than are those of any other available hypothesis, and that it is an ultimate a priori epistemic principle that simplicity is evidence of truth (Swinburne 1997b:1).

It is crucial to stress the importance of the expression 'other things being equal' in this statement of the simplicity principle, which means 'considering hypotheses with the same explanatory power'. This is the most important feature of a theory, since from an epistemological point of view, a theory is evaluated by how much and how truly it explains the event it aims to elucidate. Swinburne claims that the 'how truly' can be evaluated positively, at least in principle, when a theory is simple, given that it explains the happenings as well as its rivals do.

low prior probability of his hypothesis (due to incongruance with the prevalent background knowledge) will be largely compensated by its explanatory power and the evidence will then be able to confirm it.

⁴ The character of the simplicity principle as an addition to Bayes's theorem will be discussed and criticised in Chapter 3 (pp. 90-1).

It is not a simple task to define precisely what simplicity means. As we will see in more detail in Chapter 3, many authors, such as Mario Bunge (1963) and Mary Hesse (1967), are sceptical as regards the possibility of reaching an exact concept of simplicity that comprises the wide range of meanings it bears in scientific reasoning. Swinburne is conscious of this diversity when he includes in his notion of simplicity a considerable variety of facets. In his words, simplicity should be considered as:

[...] (1) fewness of entities and properties, (2) fewness of kinds of entities and properties, (3) more terms which can be understood without reference to other terms (i.e. more terms describing things more readily observable), (4) fewer laws, (5) individual laws relating fewer variables, (6) mathematical simplicity – i.e. fewer terms in its equations; and more mathematical entities and relations which can be understood without reference to other entities (e.g. more primitive relations, such as multiplication rather than power; vectors rather than tensors). (Swinburne 2000:1).

A major characteristic of Swinburne's definition of simplicity is that this is predominantly quantitative and mathematical. This way the concept becomes more objective and universally invariant, since mathematics and quantities are far less subject to particular cultural aspects. As we will see in more detail in the next chapter, this is certainly an improvement on his previous definitions of the concept, which seemed much fuzzier (see, for example, Robert Prevost's observation in Prevost 1990:46). As a result, according to Swinburne, if the principle is stated in this way, scientific reasoning can operate with a reasonable degree of objectivity by using the notion of simplicity for selecting the most probable theory out of a set of alternatives.

However, even if we grant to Swinburne that simplicity is a precise and manageable concept, it still remains to be shown that this concept constitutes a distinctive marker of a true theory. Why should the simplest proposal be the truest among the alternative explanatory hypothesis available? For reasons that will be discussed in greater detail in Chapter 3, Swinburne discards both the analytical and

the *a posteriori* arguments for justifying the thesis that simplicity is an indication of the high probability of a hypothesis. In other words, that theories are probably true because of simplicity is neither a truth of logic nor something known from experience. Instead, he opts for an *a priori* validation of his principle, for according to him,

The fact – however unwelcome to many – is that, if the principle of simplicity is true, it is a fundamental *a priori* truth. If data ever render one theory or one prediction more probable than another, that can only be because there are *a priori* criteria for extrapolating from the data in one direction rather than another. Yet there is no truth of logic with a consequence about which direction of extrapolation yields probable truth. So – if any proposition which is not analytic is synthetic – it is both synthetic and *a priori* that (other things being equal) a simpler theory is more probably true than a complex one (Swinburne 1997b:50-1).

In arguing that the simplicity criterion is a synthetic *a priori* truth, Swinburne points to a transcendental reason for the use of this principle in science. For him, it is a condition for theoretical scientific activity to be a rational enterprise that simplicity is taken as making hypotheses probably true (see Swinburne 1997b:56). The denial of the principle of simplicity would imply that the way scientists judge theories and predictions probable is unwarranted and, consequently, irrational. Since very few are prepared to maintain that science is an irrational activity, since simplicity plays a major role in scientific method, and since science is a paradigm of activity aimed at truth, Swinburne argues, we are entitled to claim that simplicity, all things being equal, is evidence of a probably true hypothesis.

All these claims about simplicity and its role in a Bayesian picture of scientific reasoning involve a great deal of controversy, and will be analysed critically – particularly in Chapter 3 and Chapter 7. For the moment, however, I intend only to provide an overview of Swinburne's proposal. On this same tack, let us examine in the next section how he applies the theoretical devices of the simplicity principle and Bayes's theorem in his defence of the rationality of theism.

3. Assessing Theism as an Explanatory Hypothesis

In order to assess the rationality of theistic belief in the same way that a scientific theory is evaluated, Swinburne has to consider theism as a sort of explanatory hypothesis. This task involves two major elements. Firstly, he needs to clarify how similar theistic explanation is to scientific explanation. Secondly, he needs to specify how Bayesianism and simplicity – the two main components of scientific reasoning according to his epistemology – can be applied to theism.

3.1 What kind of explanation is theism?

According to Swinburne, an explanation can be understood as an intellectual enterprise that has two main components (Swinburne 1991: 22-3). Firstly, explanations aim to describe what happens by presenting the factors (events, processes, states, objects and their properties at certain times) that have caused the phenomenon at issue. In other words, in order to explain what made *E* happen, we need to present a full description of the phenomenon in question and the attendant circumstances. Considered as having brought about a phenomenon, causal factors must be different from the event and must really have happened. This first mode of explaining a phenomenon requires a response in terms of causes. Swinburne calls the set of factors that were sufficient for the occurrence of the phenomenon *E* the full cause of *E*, which should be distinguished from other members of the set of factors involved in its happening that should be simply called ‘causes of *E*’ (see Swinburne 1991: 24).

The second component of an explanation refers to the reason(s) according to which the aforementioned cause and conditions could in fact bring about the effect in question. This part of the explanation aims to answer the question ‘Why did the

appointed cause produce the phenomenon in question?'. In other words, once we select the circumstances that are sufficient and particularly relevant to account for the occurrence of phenomenon *E*, we need to justify the claim that those factors are the causally significant ones by showing how they were able to generate *E*. A phenomenon has a full explanation in so far as we can specify a full cause for its occurrence and a reason for this cause's efficacy. In this case both the question 'what?' and 'why?' are properly answered (see Swinburne 1991: 24).

Given this general account of the nature of explanation, Swinburne distinguishes two types of explanatory accounts in view of the kind of causes and reasons adduced to explain a certain occurrence. In a scientific or inanimate explanation the reason for a phenomenon is given by the laws of nature that define the powers and liabilities of bodies that cause (in the sense of physically necessitate or make more probable than not) the effect one aims to explain (see Swinburne 1997b: 5 and 1991: 30). The causation offered by an inanimate explanation may be either deterministic or probabilistic, depending on how far the cause in question necessitates the corresponding effect.

Personal explanations are also to be understood in terms of causes and reasons, and can also have either a universal or a probabilistic form, but deal in the beliefs and desires of a person who performed a certain action intentionally. The cause of a phenomenon *E* in this case is an agent who acted intending to do so. A personal explanation is universal when the power of performing an action intentionally conjoined with the liabilities of the person's desires and beliefs entail the effect. A probabilistic or partial personal explanation occurs when the same powers and liabilities of the individual make it more probable than not that the effect will be carried out (see Swinburne 1997b:7). In other words, the beliefs, powers and desires

of a person constitute the ‘what’ of a personal explanation, whereas her intention to perform the concerned action is the ‘why’.

According to Swinburne, theism, in so far as it can be considered an explanatory hypothesis, is an instance of personal explanation. God is conceived as a person whose powers and liabilities are said to cause the existence of the universe and many distinctive features of it. God is postulated as a non-embodied person who is omnipotent, omniscient, perfectly free, perfectly good and a necessary being that created and sustains the universe in its being. In addition, the type of person God is, according to Swinburne, permits theism to explain not only what brought about the universe and its actual features but also why they happened to occur through citing God’s intention of creating and sustaining them. So, by virtue of providing not only the causes but also the reason for the existence of the universe and many of its distinctive features, theism qualifies as a theory in the same broad sense as any explanation does.

As a result, if theism can be taken as sharing the same basic structure of solid explanatory hypotheses, it meets one of the prerequisites of intellectually respectable theories. In the next subsection we will see how Swinburne demonstrates that theism also meets the other requirement of intellectually respectable inductive theories, namely the successful application of Bayes’s theorem and simplicity principle

3.2. The application of Bayes’s theorem and simplicity principle to theism

In his analysis, Swinburne opts for a presentation of the Bayesian formula slightly different from, but equivalent to the ones we introduced in the second section of the present chapter. An important point in his formalisation, however, is that he distinguishes between evidence e and background knowledge k , being considered in k

only non-empirical information (see Swinburne 1991: 15-6). In general, Swinburne shows the Bayesian formula in the following way:

$$P(h/e.k) = \frac{P(e/h.k)}{P(e/k)} \times P(h/k)$$

A first basic presupposition of this application is that the question of how well grounded one is in believing that there is a God is also a matter of uncertainty, that is, it is a matter of probability reasoning, not deductive proof as it had been in the tradition of natural theology as illustrated in the works of Aquinas and Leibniz (see Swinburne 1991: 14). The many traditional arguments Swinburne uses to ground his cumulative case for theism are laid out in the form of probabilistic inferences from the different phenomena. The arguments cite theism as the best explanation of these phenomena. So, the existence of the universe, the existence of order in the world, of conscious beings, the occurrence of miracles, evil and some singular facts in history are taken as pieces of evidence that increase or decrease the probability of the belief in God, rather than being premises of a deductive argument. In Bayesian terms, these occurrences are the pieces of evidence $\{e_1...e_7\}$ to be considered in the formal analysis.

The use of theism as an explanatory hypothesis is the second important assumption of Swinburne's application of Bayesianism to the epistemology of theistic belief. Theism is a hypothesis in the sense of both being an uncertain and unknown belief, and of being an explanation of certain pieces of evidence. As I showed in the previous subsection, the existence of God is postulated as an instance of personal explanation for the different pieces of evidence e_i , which it aims to explain. In Bayes's formula, then, the belief in God is the hypothesis h , whose posterior probability in view of evidence $\{e_1...e_7\}$ and background knowledge k , i.e. $P(h/e_1...e_7.k)$, we are searching for.

Now in a particularly important move, which I will analyse more deeply in Chapter 2, in order to comply with a requirement of Bayesian analysis seen above Swinburne also calculates the probability of theism in comparative terms. Yet he compares the probability of theism with only one alternative explanation for the evidence considered. The alternative in question is the prior probability of each piece of evidence given only background knowledge k ($P(e_1...e_7/k)$). In other words, the alternative with which theism is compared is the uncaused occurrence of each phenomenon $\{e_1...e_7\}$, i.e. of their happening anyway as ultimate brute facts (see Swinburne 1991: 86-7 and 108, for example). As we will see next chapter, Swinburne will attempt to justify this move using the principle of simplicity.

A last feature of Swinburne's application of Bayesianism to his evaluation of the rationality of believing in God I would like to highlight is the way he ascribes a value to the prior probability of the theistic hypothesis. According to Swinburne, as we saw above, there are three main objective criteria according to which we attribute a prior probability to a theory. For Swinburne, simplicity is the most important element of the three when it comes to evaluate large-scale theories like theism, which are intended to explain the existence of the universe itself. The reason for this is that there are no neighbouring fields according to which we could assess the comparative fitness with background knowledge of the hypotheses under assessment. As regards scope, Swinburne suggests that we do not consider it, since the probability value conferred by high simplicity generally outweighs any possible decrease in view of a hypothesis having wide scope (see Swinburne 1991: 106).

Based on the idea that the criterion of simplicity is the most important to be accounted in the assessment of large-scale theories like theism, Swinburne claims that the hypothesis that there is a God has a considerable prior probability. The simplicity

of the hypothesis of theism is demonstrated by three things: 1) the number of things postulated in the explanation (just one), 2) the concept of God itself, and 3) the kind of explanation it provides.

1) Theism postulates the existence of one single God capable of creating and sustaining the universe. Consequently, in relation to this facet of the simplicity principle, it is much simpler than alternatives that postulate multiple divinities, for example.

2) For Swinburne, the fact that God has the attributes of power, knowledge, freedom, presence, and goodness in an unlimited⁵ level also makes its concept one of a very simple kind, at least simpler than any explanation which resorts to a divine being with limited attributes (see Swinburne 1991: 287). The reason is that extreme values such as zero and infinite do not require the additional explanation regarding the specific amount or degree that any intermediary figure demands (see Swinburne 1991: 94). Another reason for considering as simple the idea of a person with attributes in infinite degree is the intuitive character of the concept of infinite. In his words,

Interestingly the concept of some quantity being infinitely large is often graspable by someone who has not grasped any concept of a very large number [...] One does not need to know what a trillion is in order to understand what is the infinitely long or lasting or fast. It is because infinity is simple in this way that scientists postulate infinite degrees of quantities rather than very large degrees of quantities, when both are compatible with data (Swinburne 1997b:27-8).

⁵ Swinburne carefully remarks that God's capacities have no limits but the ones imposed by logic, in order to prevent theism becoming conceptually incoherent. For a more comprehensive approach to this matter, see Swinburne 1993.

In addition to this psychological simplicity of the concept of infinite in relation to the idea of very large numbers, Swinburne claims that the divine attributes can be shown to fit neatly together, making them seem natural to us (see Swinburne 1991: 93). God's attributes fit together because they cohere with one another and have an immediate affinity. For example, a being that is omnipotent should not be limited in his knowledge but by logic, as long as knowledge is a sort of power. As a result, an omnipotent being would also be omniscient. Moreover, in being omnipotent, this being should not be influenced or determined by anything outside his control, being then perfectly free and so on. Moreover, since God is a person with unlimited capacities, beliefs and intentions, its concept can well be taken as an explanation that requires no further clarification. 'For', Swinburne claims, 'if some state of affairs *E* is explained as brought about by God in virtue of his powers and beliefs and intentions to bring about *E*, how can this action be further explained?' (Swinburne 1991: 95). The choice of an agent in the sense of the fulfilment of a decision is 'the most natural kind of stopping-place for explanation', Swinburne holds (1991:103). As a result, if we consider naturalness as a facet of simplicity, this characteristic of theism also makes it a simple theory and, in turn, with high comparative prior probability.

3) However, even if we discard naturalness as an aspect of simplicity in view of more recent developments in Swinburne's definition of simplicity (see section 2.2 above), there is another reason for considering theism simple. According to him, once we take God's beliefs and intentions as the ultimate stopping-point for explanation of evidence that is either too odd or too big to be explained scientifically (see Swinburne 1991: 71), we can reduce all explanations to only one type. In other words, theism is a simple hypothesis because it allows us to reduce physical explanations to personal ones in the last analysis (see Swinburne 1991: 105).

As a result, given the high prior probability of theism in view of the principle of simplicity and an explanatory power higher than the one of ontological naturalism (that leaves all the considered pieces of evidence unexplained), and given the crucial evidence provided by religious experience, Swinburne concludes that theism has a posterior probability higher than 0.5, which means it is a justified belief (see Swinburne 1991: 291).

4. Swinburne's Epistemological Positions in the Justification of Theism

Let us take stock of the main points in Swinburne's programme for justifying the belief that there is a God. One element is the idea that theoretical activity in science is a particularly powerful current model for any intellectually respectable activity. So, if theism wants a place in a world culturally dominated by science it has to show that the content of its proposal can be conveyed in a way structurally similar to a scientific hypothesis. Science is taken by Swinburne as essentially an inductive enterprise (see Swinburne 1991:6), whose patterns of correct inference are given by Bayesian confirmation theory (see Swinburne 1973:vi). According to confirmation theory, in Swinburne's view, the ways scientists argue in their search for more probable hypotheses are well described by means of Bayes's theorem and the principle of simplicity (see Swinburne 1991:54 and 64). Hence, in order to defend the rationality of the belief in God and the intellectual respectability of theism, Swinburne opts for applying the same inferential tools employed by science (see Swinburne 1991:56). If he succeeds in this application, Swinburne could consider himself to have in great measure met the challenge of showing that the belief in God is justified (see Swinburne 1999:34), for one will be able then to regard theism as at least as justified as any well confirmed scientific theory.

Swinburne's position regarding the justification of scientific theories as a paradigm for the justification of theism stems from his general theory of what makes a belief rationally justified. In view of the criticisms made of his account in *Faith and Reason* (1981), Swinburne abandoned the idea that to believe p is to believe that p is probable (see Swinburne 2001a: 36n). In his new conception, probability enters as a way to describe the strength of a subject's belief. For him, belief is a contrastive notion if we focus on its strength. So the strength of my belief in p can be described as 'I believe that p is more probable than not', in those cases where the contrast is only between p and its negation, as is the rule. Through this amendment, Swinburne avoids the charge of incurring an infinite regress of beliefs and postulating a general account of believing that does not match the case of young children, who do not have any beliefs about the probability of the propositions they believe (see Alston 1994c: 26ff). According to Swinburne,

The claim in the text above avoids these problems. It claims only that beliefs about p 's probability entail beliefs about p , but not vice versa. It constrains which beliefs about p 's probability can be held by a believer that p , but is compatible with her not having any such beliefs (Swinburne 2001a: 36n).

In using probability to analyse the notion of strength of belief, Swinburne gives a prominent role to Bayesianism in his theory of justification, since Bayes's theorem becomes an important way of checking the correctness of my degree of belief in p in light of evidence. For him, the probability of a proposition being true is relative to another set of propositions that constitute a subject's evidence. According to Swinburne:

The subject's evidence is then this set of propositions reporting what he is initially inclined to believe, together with the degree of prior probability which he ascribes to each, the degree of his initial confidence in them. A claim that a belief is probable is then a claim that it is made probable by this set. The greater the prior probability of basic propositions p , and the greater the conditional probability of a further proposition q on the basic propositions p (i.e. the probability that if p then q), the greater the resultant probability of the further proposition. (Swinburne, 1981b:20-1).

In other words, the degree of belief in a proposition p depends on the degree p is backed by relevant evidence. A belief is rational if the strength with which it is believed is proportional to the evidence we have in its favour, a position commonly called ‘evidentialism’ (see, for example, Stenmark 1995: 42). So, my particular belief about which team will win the FA Cup is based on empirical evidence, a set of propositions that seems at first sight true to me, namely, for example, that Manchester City has been so far the best one in the current championship. If my pieces of evidence are correct and I make the correct inferences, then the belief I base on them will be rationally justified, since for Swinburne, ‘[...] not all beliefs are rational beliefs. A belief will fail to be rational if it is based on evidence the wrong way or if it is based on the wrong sort of evidence’ (Swinburne 1981b: 33).

Swinburne’s view on belief postulates, then, that in someone’s doxastic system there are some beliefs that do not depend on any other to be considered justified by the subject (the basic beliefs). Further, there are beliefs which are grounded on the basic ones, called non-basic beliefs, a position normally called ‘foundationalism’ (see Stenmark 1995: 44). A point on which Swinburne lays considerable stress is that the foundational beliefs of a subject’s doxastic system are not known infallibly or incorrigibly (see Swinburne, 1981b:20). In his conception, there are beliefs that serve as bases for other ones without being founded in other beliefs themselves, but this does not mean the basic beliefs are unchangeable or incorrigible. A subject can ascribe different degrees of confidence to his beliefs and correct the less firm on the basis of the more reliable for him through, for example, inference.

In *Faith and Reason* Swinburne produces a theory of rationality in which the justification of a belief p depends on the evidence to which p is associated and the

inferential standards that relate p to that evidence. In addition to those elements, his classification of rationality also considers the extent to which a belief in p resulted from adequate investigation. As a result, he proposes five kinds of rationality that are presented in an order of increasing objectivity and stringency. In the first kind, a belief p is rational if it is coherent with the basic beliefs and inductive standards accepted by a subject (see Swinburne 1981b: 45). So my belief in p is rational in this sense if it agrees with my basic beliefs and the way I draw inferences from them, even if my basic beliefs are false and my inferential patterns are incorrect. The second kind of rationality puts an additional constraint to consider the belief in p as rational.

According to Swinburne,

A subject S who believes that p has what I shall call a rational₂ belief if and only if p is in fact rendered probable by his evidence, and his evidence consists of basic propositions which he is in fact justified in holding with the degree of confidence with which he does hold them (Swinburne 1981b: 46).

To be considered rational in this higher level of rationality, it is not enough that my belief in p conforms to my evidence and inferential patterns. It must to be acceptable in view of objective standards, which do not depend on my recognition.

The three other kinds of rationality refer to the extent to which my belief that p results from investigation that has been adequate for the goal of securing true beliefs. In other words, the next three concepts of rationality refer to the justification of a belief in p not only in view of evidence and inferential standards available in a certain time, but given adequate investigation over time. As a result, the third kind of rationality refers to the extent to which p and the standards on which p is judged were adequately investigated according to a subject's particular standards of adequacy (see Swinburne 1981b: 49). A failure in investigating whether a subject's belief that p is true or his standards of judgement correct given the subject's own patterns is what makes his belief in p irrational in this sense of rationality. In the fourth kind of

rationality, the subject assesses his investigation of evidence and criticism of inductive standards on which he drew his belief p in view of the pattern revealed by his own past investigations and criticisms (see Swinburne 1981b: 53). Lastly, the higher and most rigorous kind of rationality in view of investigation over time takes a belief p to be rational given objective standards of adequacy, which are independent of what the subject thinks of them (see Swinburne 1981b: 54).

Although he does not mention this same classification of five kinds of rationality in the much more recent *Epistemic Justification* (2001), Swinburne maintains the same basic ideas. He distinguishes synchronic and diachronic theories of epistemic justification. The former ones consider what it is for a belief to be justified in a given time and the latter discuss justification in view of investigation over time (see Swinburne 2001a: 9). In addition, Swinburne still maintains a gradation as regards the objectivity of inductive criteria used to evaluate one's belief. As we will see in more detail in Chapter 7, he classifies the theories of probability relation into three types. In the subjective theory of probability, probability is assessed according to criteria considered correct by a certain subject (see Swinburne 2001a: 70). In the epistemic view, the probability of a belief p is assessed in view of correct criteria but only given the limited knowledge and abilities a subject is expected to have in this type of assessment (see Swinburne 2001a: 69). The logical theory of probability consider beliefs probable in view of objective inductive standards accessible to a logically omniscient being, that is, a being who knows all logical possibilities and has correct inductive criteria (see Swinburne 2001a: 64).

However, *Epistemic Justification* brings an important addition to Swinburne's theory of rational belief, namely the clarification of his position regarding the internalist/externalist debate. Given the recent developments of Alvin Plantinga's

externalist programme in the justification of theism (see Plantinga 2000), that point becomes even more relevant. Still, given the extension and complexity of that debate and the aims of this thesis, I will simply state Swinburne's position here in order to briefly distinguish it from the alternative I will suggest in the final chapter on how to use Bayes's theorem and religious experience in the justification of theism. Basically, an externalist theory of justification holds that what makes for the justification of a belief is external to a believer, that is, justification is determined by the causal antecedents of our beliefs. On the other hand, internalists assess the degree of justification of a belief only in view of what is internal to the believer, that is, to what he can have access through introspection. Swinburne clearly opts for internalism, since, in his words, 'we value the scientist for having a belief that is not merely true, but results from consciously responding to all the evidence of which he is currently aware in the right way' (Swinburne 2001a:163). Moreover, he states that there is 'no intrinsic merit in having a belief justified by externalist criteria of a reliabilist kind' (see Swinburne 2001a: 163).

Now, it follows from Swinburne's evidentialism, foundationalism and internalism that a rational belief is predominantly the result of a relationship between basic beliefs and inferential criteria of which the subject is aware (see Swinburne 1981b: 36). Yet, why not consider the belief in God as properly basic as Plantinga has once suggested?⁶ Swinburne does not discard this idea as an alternative for justifying theism, 'but', he warns,

many of us who believe that there is a God are not in that position. Either our belief is not a basic proposition at all, or – if it is – it would be defeated by counter-evidence in the absence of further support. In that case its justification will depend on how much probability it gains from other basic propositions; and how weak is the counter-evidence (Swinburne 1999:34).

⁶ This is basically the idea defended by Plantinga in his famous article 'Reason and belief in God' (see Plantinga 1983).

In other words, for Swinburne, if theism is rational, this is predominantly a matter of inference, not immediate acquaintance. He does not dismiss the possibility of the belief in God being basic – as the result of a mystical experience, for example – but he only admits this possibility within the framework of an inductive inference. His treatment of religious experience as evidence for theistic belief will be a consequence of this stance, as we will see in Chapters 4, 5 and 6 of the present thesis.

Given the importance universally accepted criteria and formal inductive standards have in Swinburne's method to justify theism, his approach was labelled by William Abraham as 'strong rationalism' (see Abraham 1985: 114ff). In the last chapter of this thesis I will spell out Abraham's classification in order to better situate Swinburne's enterprise and to clarify my own alternative position.

What follows next, however, is a critical analysis of Swinburne's use of Bayes's theorem, the principle of simplicity and religious experience in his programme for restoring the intellectual integrity of belief in God. The next chapter will therefore be devoted to discussing some difficulties with the idea that the Bayesian formal inductive inference can be used to justify theism.

Chapter 2 – Some Problems with the Application of Bayesianism and Simplicity to Theism

In one of the most important defences of theism in twentieth century philosophy, Richard Swinburne both preserves and renovates the tradition of arguing in favour of the existence of God. Arguments like the cosmological and the teleological, and the argument from miracles, for example, which were very well known to authors like Aquinas and Leibniz, are retrieved in *The Existence of God*. However, Swinburne does not state these arguments in a deductive form but, more modestly, as parts of an inductive and probabilistic case for theism¹. The traditional arguments are taken not as proofs but as instances that increase or diminish the probability of the hypothesis that God exists. Assuming that the more probable a hypothesis is the more justified is the corresponding belief (see Swinburne 1999:31), Swinburne postulates that the various relevant arguments may be added up in a cumulative form. Proceeding this way, the final result (the power of the summed arguments pro deducted from the arguments against) will point to the degree to which the belief in God is rational.

The aim of this chapter is to analyse critically the application by Swinburne of the Bayesian inferential model and the concept of simplicity in his arguments in favour of the existence of God. In this analysis I will not assess whether these assumptions regarding scientific theories are correct – i.e. whether science can really be well accounted for in terms of Bayesianism and the principle of simplicity – but rather examine the extent to which these concepts are applied satisfactorily to theism

¹ It could be said that classifying Aquinas's type of argument as deductive would be anachronistic. However, this point does not preclude – in fact, it even reinforces – the observation about the originality of Swinburne's approach in the epistemology of religion to be made in what follows.

as an explanatory hypothesis. This aim will be carried out mainly by means of a review of the principal criticisms of Swinburne's method.

Swinburne's approach to estimating the probability of the existence of God relies on two notions of inductive argument. Firstly, he investigates whether the different pieces of evidence he considers add to the prior probability of the hypothesis of theism, that is, whether we can construe a good C-inductive argument from each piece of evidence (see Swinburne 1991: 7). In formal terms, where e stands for a piece of evidence, h for the hypothesis that God exists, and k for background knowledge, we have that an argument from e to h is a good C-inductive argument if and only if $P(h/e.k) > P(h/k)$. A good C-inductive argument is then an inference in which the initial probability of the hypothesis is increased by the consideration of a certain piece of evidence e , that is, when e confirms h . So from Bayes's theorem we have that the higher $P(e/h.k)$, the higher tends to be $P(h/e.k)$, and the smaller $P(e/k)$ the more probable $P(h/e.k)$ is expected to be. By the same token, evidence e will confirm h if and only if the probability of e given h (or the likelihood of h) is higher than the probability of e in view of the negation of h , that is, given that theism is false. In formal terms, $P(h/e.k) > P(h/k)$ if and only if $P(e/h.k) > P(e/k)$ and if and only if $P(e/h.k) > P(e/\neg h.k)$ (see Swinburne 1991:108). An important remark regarding C-inductive arguments is that, in order for evidence e to increase the probability of h , i.e. in order to make $P(h/e.k) > P(h/k)$, the prior probability of h [$P(h/k)$] cannot be zero, for then $P(h/e.k)$ will also be zero.

The second kind of inductive inference used by Swinburne is called a P-inductive argument, which deals in whether a hypothesis is more probable than not, i.e. whether $P(h/e.k) > 1/2$ (see Swinburne 1991:17). As with C-inductive ones, a good P-inductive argument will depend in a considerable extent on the prior probability of

h . It is only after considering the prior probability of h that we can reach to a conclusion on whether h is more probable than not, for even if $P(h/k)$ is not zero and evidence e raises its probability by means of C-inductive arguments, the prior probability of h may be so low that its posterior probability may end up below $\frac{1}{2}$. It is because of this important problem of the prior probability of the hypothesis of theism that Swinburne relies so much on the principle of simplicity, as we saw in Chapter 1.

In what follows I will examine some problems related to this application of Bayes's theorem and the principle of simplicity to the hypothesis of theism. These problems will be considered under three main headings: 1) general obstacles to the application of Bayesianism to the belief that God exists; 2) difficulties involved in ascribing a prior probability to theism, and 3) the question of to what extent the theistic hypothesis is simple.

1. Can we use Bayes's theorem for assessing theism?

As we saw above, the assessment of a hypothesis using Bayes's theorem involves two basic elements: a likelihood inference and the ascription of a prior probability to the hypothesis in question. In a likelihood inference we calculate the extent to which the probability of evidence e given the hypothesis h under evaluation is greater than the prior probability of e , that is, whether $P(e/h) > P(e)$. The higher $P(e/h)$ in relation to $P(e)$, the larger will be the ratio $P(e/h)/P(e)$ in the theorem, which expresses how much the hypothesis explains the phenomenon and how much it can update (confirming or disconfirming) the initial probability of h . In the present section I will discuss some criticisms of Swinburne's proposal regarding the likelihood inference involved in the evaluation of theism and the general adequacy of employing Bayes's theorem to assess the rationality of religious beliefs. The question

regarding the ascription of a prior probability to the hypothesis that God exists will be approached in the two subsequent sections.

1.1 A general inadequacy in the use of Bayesianism in religion

John Mackie was a colleague and friend of Swinburne. For more than twenty years they debated the philosophical problem of the existence of God (see Swinburne 1983: 385). In this long and fruitful debate, however, they reached divergent conclusions about the balance of probabilities regarding the hypothesis of theism (see Swinburne 1991: 291 and Mackie 1982: 253). Robert Prevost, one of the most important critics of Swinburne's approach in the epistemology of religion, takes this crucial divergence as a starting point for a general objection against the use of Bayes's theorem in the assessment of theistic belief. Prevost argues that despite the fact that both Swinburne and Mackie agree that theism should be discussed using the tools provided by the probability calculus, the results they arrive to are completely different. In Prevost's words,

The agreement between the two, however, ends with their similar Bayesian methodologies. It is a consequence of Bayes's theorem that, if two alternative hypotheses have similar explanatory power, the evidence confirms to a larger extent the hypothesis with the greater prior probability. Both Mackie and Swinburne give the impression that an assessment of the evidence of theism or atheism is a simple matter of determining the relevant prior probabilities. But though, taken as hypotheses about the nature of the universe, theism and atheism have similar explanatory powers, the assessment of the prior probabilities of the alternative hypotheses varies tremendously depending on the philosopher. According to Swinburne, theism has high prior probability because of its simplicity, but, according to Mackie, theism is unacceptable because its lack of fit with background knowledge shows that it has very low prior probability. The result of these differences over evaluative criteria is that Bayes's theorem records a vastly different probability for theism on given evidence (Prevost 1990: 39).

From these considerations, Prevost concludes that '[...] the use of Bayes's theorem is not a completely satisfactory method for assessing the evidential support for theism' (Prevost 1990:55).

One important point to be noted is that Swinburne and Mackie agree not only about the adequacy of using Bayes's theorem for assessing the probability of theism, but also that this inferential tool should be interpreted as a means to measure, in Mackie's words, the 'objective chance' of a hypothesis about a certain occurrence (see Mackie 1973: 223-4). In Swinburne, this idea of objectively measured belief is better interpreted under the logical theory of probability (see Swinburne 1973: 24). According to the logical theory, the probability measured by Bayes's theorem, also called epistemic probability or probability of a hypothesis given evidence, is a degree of rational belief. By 'rational belief' the logical theory means the one that is a result of universal criteria regarding initial probability distribution, that is, the ascription of a prior probability to the hypothesis under assessment must be based on totally impersonal and universal patterns. The choice of the logical theory of probability by Swinburne and the consequences for his programme of justification of religious belief will be discussed at greater length in Chapter 7. For now, it is enough to say that we can use Bayes's theorem to assess the rationality of a certain belief based on theories of probability different from the one championed by Swinburne. So, remarks about the failure of the logical theory of probability in achieving this universal and objective criterion for defining the initial probability of a hypothesis do not mean that Bayes's theorem is incapable of describing the main elements of a discussion of the rationality of theism. In other words, Prevost may be right in his criticism of the pretension of a universally rational approach of probabilistic arguments directed to the justification of theism, but this does not necessarily preclude the use of the Bayesian method of inference as such.

1.2 Bayes's theorem and the problem of evil

Prevost strengthens his case against the use of Bayesianism in the epistemology of religion when he argues that Bayes's formula does not account for important steps in the specific justification of theistic belief. He observes that Swinburne does not employ the theorem either in his defence of the evidential value of religious experience or in the discussion of the arguments involved in the problem of evil (see Prevost 1990: 20f). Surprisingly, however, he does not discuss in detail the treatment given by Swinburne to religious experience, even considering the crucial character this point has in Swinburne's argument. Prevost, instead, concentrates his attention on the way the problem of evil is dealt with in Bayesian terms. For Prevost, 'an appropriate response to the problem of evil requires explaining why God allows evil, and it is the evaluation of the power of theistic explanation in this sense which makes difficult the assessment of evil using Bayes's theorem' (Prevost 1990:21). Later on he asserts:

An instance of evil disconfirms the existence of God whenever we have no apparently plausible reason for God allowing it. The degree of disconfirmation is inversely proportional to how well the postulated reason accounts for evil and, at the same time, preserves the goodness of God: the more reprehensible the evil and the less plausible the reason, the more disconfirmed is theism. This pattern of disconfirmation does not fit the Bayesian model (Prevost 1990:26).

By applying Bayes's formula to the problem here in question we can say that the existence of evil e disconfirms the hypothesis of theism h in so far as evil is very likely in a world where God does not exist and considerably unlikely given h , that is, $P(e/\neg h) > P(e/h)$. This means the explanatory power of theism in relation to evil is low. It is not zero because of the elements involved in the theistic hypothesis regarding the divine attribute of goodness, that is, God could be good and allow some evil for certain reasons, which make the occurrence of evil probable even given the existence of God. Prevost is right when he remarks that the details of theistic

defences against the problem of evil do not fit Bayes's theorem easily. That is, Bayes's theorem will not tell us whether the Free Will Defence is coherent, or whether second order goods outweigh first order evils.

Nevertheless it seems Prevost misjudges the role of formal reasoning when he says that Bayes's theorem is not appropriate for assessing theism because it fails to grasp the idiosyncrasies of the problem of evil. When a physicist uses the formulae of classical mechanics to explain the movement of a horse he also misses much of what is involved in this animal action. His formal explanation does not account, for example, for the particular pattern of stepping of this species of animal or the anatomic interaction between muscles and bones involved in this motion. What his formal account is capable of doing is to highlight the fundamental mathematical structure of the event from a physical point of view. The employment of Bayes's theorem may be said to have an analogous effect in Swinburne's account. It shows the basic logical relations between the evidence of evil and the hypothesis of theism. Bayes's theorem shows us that we must compare the probability of evil assuming that there is no God, with the probability of evil assuming that there is a God. One way theism explains evil is by providing reasons, which (despite God's goodness) make the occurrence of evil likely in a God-created universe. Bayes's theorem itself will not yield a theodicy, but the assessment of the explanatory power of theism over evil can be entirely Bayesian, enabling Swinburne to say that God could have created a world where evil was a likely outcome without this counting against the existence of God (see Swinburne 1991: 220). If these considerations are right, there do not seem to be any insurmountable obstacles to fitting the analysis about the impact of the evidence of evil on the likelihood of theistic hypothesis in a Bayesian way, despite Prevost's assertions.

As Mackie correctly observes, since probabilistic evaluations are made in almost all fields of human life, there is no point in associating the Bayesian approach with a scientific world-view, as we can apply Bayes's theorem just as well to ordinary beliefs (see Mackie 1982: 5). So, if the analysis contained in the two subsections above is correct, the general criticisms provided by Prevost against the use of Bayes's theorem in the evaluation of the rationality of theistic belief do not pose any great difficulties for Swinburne. Yet, Prevost's observations about the conflict between Swinburne's and Mackie's criteria for assigning a prior probability to theism contain an important insight that will be taken up in Chapter 7, in a critique of the theory of probability chosen by Swinburne. I will also examine the different arguments put forward by Mackie and Swinburne in defence of their particular criteria for initial probability distribution, which will come in section 2 of this chapter.

1.3 Swinburne's likelihood inferences

In his discussion of how far we can go in using the resources of probability calculus to assess questions like the existence of God, the reliability of extra sensory perception reports and others, the statistician David Bartholomew has pointed to a considerable obstacle to the determination of the probability of evidence taken into account by Swinburne's argument. According to Bartholomew, Bayes's theorem ordinarily determines the posterior probability of a hypothesis h only in case all relevant alternative hypotheses to h are considered (see 1988:152). In the example I explored in Chapter 1 of the doctor searching for the correct diagnosis for a set of symptoms, I postulated only two exclusive options for didactical reasons. However, a hypothesis can face many more than two ways of explaining a certain phenomenon and this must be taken into account in a formal discussion of the issue. One way of

doing this is representing Bayes's rule using Laplace's form, also shown in Chapter 1 (p. 18), which expresses more clearly the idea of comparison between alternative hypotheses to explain a same set of phenomena.

According to Bartholomew, we can only clinch a Bayesian argument from evidence e to a hypothesis h when we can give an exhaustive list of the alternative explanatory proposals to h (see Bartholomew 1984: 59). Nevertheless, in most of his discussions, Swinburne compares theism only with the hypothesis that there is no further explanation for the evidence in question, i.e. the 'null hypothesis' in the specific sense of the expression² (see Swinburne 1991:104-5). More precisely, Swinburne narrows down the alternatives just to the personal explanation provided by theism and the causal explanation given by natural science. Since science cannot account for these pieces of evidence – since they are too odd or too big for natural science to explain them (see Swinburne 1991:71) – the only alternative to theism would be then to leave those phenomena unexplained.

However it is plausible to argue that the events recounted in Swinburne's argumentation – as the existence of the universe, of order in the world, of conscious beings, and others – can come under more than two hypotheses. The theistic hypothesis can take more than one form, as a finite deity with powers limited only to do what would be needed to create the universe, like the Platonic demiurge, for example, or even more than one limited finite deity, each of them responsible by a particular feature of the universe. We could also mention non-personal, deistic or even pantheistic alternatives like the action by *logos* and *pneuma* proposed by the Stoics, or the Spinozian Single Infinite Substance or the Absolute Spirit of German

² The expression 'null hypothesis' is of current use in statistics and in its specific sense expresses the thesis that there is nothing to be accounted for about the evidence under enquiry, i.e. its features are due to chance alone, not to a systematic cause (see, for example, Priest 1981: 425).

Idealism to explain the existence of the universe. In fact, alternative cosmological hypotheses to traditional theism are potentially infinite in number. Following Bartholomew's point, then, we could say that in not accounting for at least a larger set of alternatives rival to theism in his probabilistic comparison, Swinburne may be accused of a serious mistake in his application of Bayes's theorem to the assessment of the theistic hypothesis.

It is not only in cosmology that we potentially have an infinite set of alternative explanations. For all phenomena to be explained in science and ordinary life innumerable rival accounts are logically possible. Swinburne is very aware of this issue, known as the 'curve fitting problem' (see Swinburne 1996: 26ff). According to Swinburne, and consistent with the position postulated by the logical theory of probability, we need objective criteria in order to select from this potentially infinite set of alternatives only the most important ones so that we can compare their probabilities in a posterior moment of the probabilistic reasoning. As I mentioned in Chapter 1, the criterion Swinburne takes to be the most important is simplicity, and his reply to Bartholomew's objection would be based on the corresponding principle as is clear from the following quotation:

I suggest that theism is very, very much more probable than any rival personal explanation of the existence, orderliness, and other characteristics of the universe. A personal creator of the universe must be a person of immense power and to suppose that he has very great but finite power would be, as we saw earlier, to propose a much less simple hypothesis than the hypothesis that he has infinite power. It would raise the enormous problem of why he had just the amount of power which he had and what, if anything, limited his power in this way. Some other force would, as it were, stand against God limiting him. Similar points apply to hypotheses that the personal creator of the world has limited knowledge or freedom. The other alternative hypotheses postulating a limited creator of the universe are very, very much less probable than the hypothesis that God made it. The only plausible alternative to theism is the supposition that the world with all the characteristics which I have described just is, has no explanation. That however is not a very probable alternative. We expect all things to have explanations (Swinburne 1991:287).



In other words, using the criterion of simplicity, Swinburne rules out all other possible explanations as implausible, concentrating his attention exclusively on the hypothesis that the pieces of evidence he considers in the arguments are ultimate brute facts i.e. are probable in themselves. Thus, he is able to claim, the list of alternative hypotheses chosen for meeting the requirements of a Bayesian assessment of theism is not exhaustive, but is sufficient, since it focuses on the only one that could have any considerable prior probability, according to the simplicity principle.

One might object that he has not applied his principle to all non-personal cosmological hypotheses as he has to the ones mentioned above. His calculation will be defective as a result of not considering metaphysical hypotheses with an impersonal absolute. I have found no answer to this objection in Swinburne's works. Nevertheless, this omission is not necessarily a surprise or even a defect if we consider that the main target of his justification effort is not the metaphysician, but the natural scientist who champions the naturalistic position in cosmology. If this is really so, however, technically speaking, his conclusion, if favourable to theism, could not be that this hypothesis is generally more probable than not, as he intends it to be, but that at most it is more probable than naturalism at least. In other words, his evaluation only permits a limited comparative conclusion.

In addition, Swinburne's delimitation of the set of relevant hypotheses in this discussion is not made according to the parameters provided by the logical theory of probability. As I argued above, there are many alternative explanations for the evidence Swinburne discusses that are not discarded by means of the principle of simplicity. If we eliminate them by arguing that these hypotheses are not relevant in the context of the justification of theism in modern academic and scientific circles then we are bringing into the argument elements that are not permitted by the logical

theory of probability. Chapters 7 and 8 will discuss more deeply how the problem of delimiting the set of relevant theories can be sorted out using a different theory of probability. In Chapter 3 I will argue that the whole idea that we need to consider an infinite set of alternative hypotheses, which is Swinburne's main rationale for the principle of simplicity, is also very controversial. For the moment, however, it is sufficient to claim that Bartholomew's objection to Swinburne's approach to a Bayesian justification of theism is a very serious one, but not to any and every Bayesian approach.

In any case, what is important to highlight here is that Swinburne's answer to this problem is based on the principle of simplicity. However, Bartholomew also points to another, potentially more serious difficulty in the use of Bayes's theorem by Swinburne. The difficulty in question is the assignment of a prior probability to theism, an issue that will be analysed in the next section.

2. Can we attribute a prior probability to theism?

The likelihood calculation in Bayes's theorem is the way of updating our initial belief in a hypothesis h . The result of a Bayesian computation is called posterior probability, which is the prior probability of h ($P(h)$) modified by the consideration of relevant evidence. In his application of Bayes's theorem to theism, Swinburne must ascribe a prior probability to theism to make the calculation possible. In doing so, he has to observe two constraints. Firstly, he needs to use objective and universal criteria of probability distribution, as the logical theory demands. In addition, he needs to attribute this initial probability without considering any empirical information, i.e. in a totally *a priori* way, since theism is intended to explain all contingent facts, including the existence of the universe itself.

In view of these requirements, Bartholomew expresses great scepticism about the possibility of meeting the challenge. In his words,

The crux of the matter is whether one can assign a prior probability to any hypothesis prior to having any knowledge whatsoever. If one does claim to be able to do this it must surely be based on one's general knowledge of the way things are and this is posterior to the originating event and not prior. We are trying to do the impossible by asking what degree of belief would be justified in the hypothesis that God exists prior to anything existing at all including the human mind which is being asked to make the assessment. This seems quite impossible if not absurd (Bartholomew 1996: 167-8).

Bartholomew's criticism concentrates on the second constraint I mentioned above, that is, the restriction about which kind of information should be considered in the assignment here in question. As we saw in Chapter 1, Swinburne postulates that the prior probability of theism should be evaluated according to principles of rational belief, which are *a priori* in the sense of both imposing order on the way we elaborate the content of our thoughts and of being independent of empirical information. Among the criteria he lists (adequate fit with background knowledge, scope and simplicity), Swinburne opts for simplicity as the most important, and the basis on which he could attribute a prior probability to theism. Yet he does not say that one should assign that initial probability 'prior to having any knowledge whatsoever' if 'prior' is ascribed a temporal meaning, that is, of having psychologically acquired information, which seems to be the sense employed in Bartholomew's analysis. The priority of the criteria required for assessing the initial probability of the belief that God exists is not temporal but logical; they are thought of as patterns for ordering thinking itself, independently of experience. As a result, the question about whether it is reasonable to think of anything prior even to the existence of the human mind is irrelevant, since the matter is not psychological or empirical but logical and transcendental in the Kantian sense.

In fact, Bartholomew is joined by other authors in his scepticism about the possibility of ascribing a prior probability to theism prescindend from any information about the world. In his *The Miracle of Theism*, one of the first critical analyses of Swinburne's probabilistic version of natural theology, Mackie had made a similar observation, when he said:

Still, all that is being said is that the existence of a complex physical universe *raises* the likelihood of a god, makes it more probable that it would have been otherwise, that is, if there had been no such universe. But it is hard to see how this helps us. How can we even think about the antecedent probability that there should be a god, given that there was no such universe? Presumably we must think of an initial probability of there being a god, relative only to tautological information, and if we have rejected the ontological argument this will be pretty low (Mackie 1982: 98-9).

The assumption taken by Mackie in this quotation is that the main criterion for establishing the prior or antecedent probability of a hypothesis is the fit of the hypothesis with background knowledge, that is, the set of information we have about the world prior to considering a specific piece of evidence. Now, since the first piece of evidence to be accounted for is the existence of the universe itself, no empirical information remains to adjudicate on the prior probability of theism, which for Mackie is a serious obstacle to an inductive argument in favour of theism. In addition, under the criterion of background knowledge, theism should receive a very low prior probability, since it postulates direct intentional action of a disembodied personal being as the cause of the existence of the universe. This postulation is improbable given our background knowledge because, in Mackie's words:

All our knowledge of intention-fulfilment is of *embodied* intentions being fulfilled *indirectly* by way of bodily changes and movements which are *causally* related to the intended result, and where the ability thus to fulfil intentions itself has a *causal history*, either of evolutionary developments or of learning or of both (Mackie 1982: 100).

An important point to be made regarding this remark by Mackie is that, if Swinburne were to judge the prior probability of theism according to background knowledge

from his logical theory approach, he really would need to conform his assignment to the current knowledge about the features of personal action in general. This is the case because he wants to base the God-hypothesis on completely impersonal and universal grounds, which he primarily takes to be those acknowledged by contemporary science. In other words, since Swinburne intends to base his degree of belief on patterns acceptable by both theists and non-theists, he needs to show that the concept of a disembodied personal being acting intentionally and directly in his causation of the universe is coherent with what both parties accept about personal action. Even if he could show there is no incoherence in principle here, he would need to admit that God is a type of person that diverges very much from what we normally know about persons.

Nevertheless, Swinburne's reply to Mackie is of a very different sort: he rejects background knowledge as the main criterion and postulates that the comparative prior probability of theism and naturalism should be judged according to the principle of simplicity. For him, if a person can be understood as 'a being with power (to do intentional actions), knowledge, and freedom (to choose, uncaused, which action to do)' (Swinburne 1983: 385), then human beings are persons with a limited degree of these properties and God is a person with an infinite level of power, knowledge and freedom. Considering that 'it is always simpler to postulate infinite or zero degrees of some property than a certain precise value of it' (Swinburne 1983: 385), God can be said to be the simplest kind of person conceivable.

In addition to postulating that God possesses those properties in an infinite degree, the hypothesis of theism is also simple because it proposes a simple mode of causality, that is, the direct, unmediated accomplishment of intentional actions (see Swinburne 1983: 386). So, the kind of person theism postulates for God is not only

comprehensible but also very simple, and if simplicity increases the probability of a hypothesis, then theism has a significant prior probability as well. Mackie's objection does not apply because the prior probability of the belief in God is to be judged exclusively by *a priori* considerations, such as the principle of simplicity. 'The simplicity of a hypothesis', Swinburne claims, 'is not a matter of its familiarity, whether or not it is exemplified in the world of experience' (Swinburne 1983:387). No factual background knowledge should be assumed to evaluate the hypothesis, but merely analytical truths and *a priori* principles. So it does not matter if in fact the examples we know of intentional action do not instantiate the simplicity of the relation between intention and its realisation in a being like God.

So, in Swinburne's reply the criterion of simplicity should be preferred to the fit with background knowledge in judging how probable theism is initially. Recall that the reason he presents for this precedence is the fact that the theories in contention here have no neighbouring, related fields. His position regarding the relationship between the criteria of simplicity and background knowledge, then, is crucial for the success of his application of Bayes's theorem to the justification of theism. This point is so important that I will come back to it in Chapter 3, when the difficulties of simplicity as an epistemological principle will be analysed at greater length. Let us, however, first discuss, in the following final section of the present chapter, some troubles with the characterisation of theism as a simple hypothesis.

3. Is theism really a simple hypothesis?

Even if we grant to Swinburne that the justification of the belief in God can be achieved by means of the Bayesian inferential apparatus and that it is possible to assign to theism a prior probability taking into consideration mainly the principle of

simplicity, we should still check the extent to which the belief that there is a God is a simple explanatory hypothesis at all. It was Mackie again who first raised this issue, when he said:

Contrary to what Swinburne says, the postulate of a divine mind, if given enough content to raise the probability of there being pervasive regularities, in particular if we assign to this mind the power to create a universe from nothing and to put into it and maintain in it pervasive regularities by unmediated fulfilments of intention, is far from simple. As I said when discussing personal explanation in Chapter 7, the introduction of this category of immediate intention-fulfilment is at variance with what we really know about our own intentional actions, and conforms only to an illusory, over-simplified, naïve understanding of them (Mackie 1982: 149).

Mackie's argument for the complexity of the theistic hypothesis, however, as we can see in the quotation above, lacked a discussion of the concept of simplicity, which is fundamental in view of Swinburne's approach. Instead, Mackie appealed again to the poor fit of the concept of a disembodied personal being with our background knowledge, a move barred by Swinburne's reply as we have already seen.

Yet, the issue of how simple the theistic hypothesis is has received a deeper analysis than that provided by Mackie in an article by Don Fawkes and Tom Smythe (1996). According to them, the fact that the kind of person Swinburne is proposing has the capacities of power, knowledge and goodness in an infinite degree turns theism into a very complex hypothesis and God into a very complex being. Why postulate a creator with many more capacities than he would ever need to create the universe? Why assume that this being is immortal if it would be simpler to propose a god with only the capacity to create the universe and so would die after having completed his task?³ Simpler still would have been to explain this evidence without appeal to any god, the authors argue. A hypothesis that assumes more than the bare necessities to explain its corresponding phenomena can hardly be accounted as simple

(see Fawkes & Smythe 1996:263). Moreover, if we consider that for Swinburne simplicity is mostly a quantitative matter as we saw in Chapter 1.2.2 (p. 24), the knowledge of an infinite number of propositions, as God is supposed to possess, makes of Him the most complex being conceivable cognitively speaking. If simplicity is a matter of economy, of parsimony, then it seems at least bizarre that an entity that owns an infinite number of qualities may be classified as simple.

The controversial character of the concept of ‘infinity’ is the main idea behind Quentin Smith’s critical reaction against Swinburne’s postulation that theism is more probable than naturalism given the criterion of simplicity. Smith has argued that Swinburne’s comparison between the sole cause for everything in the universe postulated by theism and the infinite number of causes claimed by naturalism is not correct, and it is only because of this misconception that theism is said to be simpler than its rival. However, Smith argues, ‘the person, *God*, is not the cause of everything in the universe. Rather it is God’s *creative acts*, the divine volitions, that are the causes’ (Smith 1998: 92). Since these creative acts correspond in number to each part of the universe that was created or being created, the purported simplicity of theistic explanation is shown to be illusory, for it involves not only an immense number of causal events in its explanation but also postulates them in addition to the material power and liabilities proposed by its rival. In fact, Smith claims, it is naturalism that is simpler than theism, not the opposite (see Smith 1998: 92).

Smith’s argument has force assuming that God causes all things by innumerable creative acts. One might retort, however, that this move sounds very artificial, for, since Smith does not deny that God is the sole cause of these creative

³ The notion of a mortal deity with finite powers was suggested, for example, by Hume in his *Dialogues Concerning Natural Religion* (1935), part V.

acts, God ends up being the single, unique cause of the universe. Moreover, naturalism cannot postulate ‘nature’ as the cause of all material powers and liabilities at work for the occurrence of the events, since ‘nature’ is just the name given to this whole set. As a result, naturalism leaves unexplained whence these powers and liabilities come. What we have, then, this reply could claim, is really God on one side and on the other the large quantity of material forces postulated by naturalism as the ultimate cause of all events in the universe. None the less, without considering God’s creative acts in the reckoning of explanatory elements, the mere addition of God to natural causes makes theism less simple than its rival, given that it postulates more entities to explain the same phenomena. Indeed, it is important to notice that Aquinas had already admitted this point in his famous Five Ways. He did not argue for the relative simplicity of theism but contended that we in fact need God to explain thoroughly the occurrences of the universe. In other words, for Aquinas, the relative lack of simplicity of theism would be largely compensated by its higher explanatory power (see Aquinas *Summa Theologica* Q. 2 Art. 3).

In addition, Smith offers another reason for disagreeing with Swinburne’s evaluation of the comparative prior probability of theism and naturalism regarding simplicity. Recall that the main reason why theism is a simple hypothesis is that God has all His attributes to an infinite degree, and that, according to Swinburne, it is simpler to postulate a being with unlimited qualities than with limited ones, since any limit cries out for explanation. Smith argues, however, that the concept of infinity used by Swinburne is equivocal, with at least four different senses. ‘Infinite’ refers to 1) a number (the Cantor’s transfinite number aleph-zero), 2) the instantaneous or infinitely fast speed of light, 3) the maximum degree of a property (which is the sense in which is said that God’s properties are infinite), and 4) the set of all numbers,

including the various transfinite ones (the different ‘types of infinite mathematical numbers’), which God is said to know. Swinburne uses all these different meanings in a mostly indistinguishable way (see Smith 1998: 92-3). Yet, the equivocation here involved does not seem to be so problematic as Smith attempts to demonstrate, since Swinburne’s point is not that the concept is univocal, but that the notion of infinite as a quantity or degree is simpler than any particular figure we may attribute to an object, and consequently, if God is a personal being with attributes in an infinite degree, He is the simplest person we can conceive.

It would be problematic, however, if we could not compare the notion of infinity used in mathematics or physics and in theology, as Smith asserts (see Smith 1998: 93). The reason he presents for this, however, is rather weak. Smith states that ‘God’s infinite goodness’ is not equivalent to ‘God is capable of performing an aleph-zero number of good acts’, since this one is consistent with ‘performing an aleph-zero number of evil acts’, which would not be acceptable to theism. The problem with this objection is that one might retort by saying that the infinite goodness attributed to God is not in the number of good acts He performs, but in the degree of righteousness in each singular act, which, being infinite in goodness, is not compatible with any degree of evil⁴. If so, Swinburne could still postulate the use of a mathematical concept of infinity to God, even in view of Smith’s observations.

However, while this last remark by Smith may not be seen as so harmful to Swinburne’s analysis as at first sight, another philosopher, not directly concerned with the probabilistic justification of theism, has made it possible to raise some important problems with the idea that theism is simple because of the concept of infinity. In a

⁴ This is, in fact, one of the elements of the problem of evil, which would not be posed if God’s good acts were trivially compatible with evil acts.

paper comparing infinity in mathematics and in theology, Jill Le Blanc argues that the concept in the two fields cannot be easily assimilated. According to her, ‘the conception of the theological infinite is not a conception of an infinite collection, but rather of the unbounded or unlimited’ (Le Blanc 1993: 52). In mathematics, the infinite can be either an extension of the finite, as a result of the application of a certain rule or process (the potential infinite) or an actually existing collection of an infinite number of parts (the actual infinite). In theology, Le Blanc claims, the infinite is thought of as a necessary attribute of God and cannot be understood save by the idea of the unlimited. This idea of limitlessness is the one behind the idea that God’s attributes are infinite. In Le Blanc’s words, ‘to say that in God being, goodness, power and so forth are infinitely present is to say no more than that the quality is not limited by the nature of God, as it *is* limited by the nature of any creature in which it is found’ (Le Blanc 1993: 56).

In fact, the unreconcilable difference between God and His creatures is a recurrent theme in theology and takes us to another facet of the theological concept of infinity: that God is infinitely mysterious, that we can talk about Him only in an analogical sense. God’s infinite nature is beyond our common knowledge, inaccessible to our full comprehension. The idea of mystery involved in the notion of infinite in theology is another point at which the theological and the mathematical infinity become incomparable. According to Le Blanc, ‘[...] mathematics shows that, while we may not be able to *encompass* the infinite – we cannot actually pass through all the numbers in an infinite series – we can still *grasp* the infinite, and by finite means’ (Le Blanc 1993: 59). In being graspable, mathematical infinity does not share with the theological notion the power of provoking the typical reactions of the religious person in her contact with the sacred, as anxiety, delight, fear and trembling.

Modern mathematics deals with infinity as it deals with any concept of set theory, with no especial wonder or fascination. As a result, concludes Le Blanc,

It may be that the proposition ‘God is infinite’ can be taken literally only when infinity in general is shrouded in mystery. When infinity is ‘secularized’ and mathematical infinity is given an increasingly clear and unmysterious meaning, ‘infinite’ can be understood of God only figuratively [...] We cannot somehow extend the mathematical concept of the infinite in order to gain a deeper understanding of the nature of God. Instead, comparison of the mathematical with the theological concept brings into light the experience of God as the mysterious unspeakable (Le Blanc 1993: 62).

If Le Blanc’s arguments for the incomparability of the mathematical and theological meanings of infinity are correct, then Swinburne’s claim that theism is simple because of God’s infinite attributes faces considerable difficulties. The idea that we can conceive of infinity in a much simpler way than any particular number is clearly taken from mathematics. From a theological point of view, however, infinity is not an accessible thing to consider at all, but the most mysterious, paradoxical and fascinating thought the human being is capable of attempting. So, if we grant to Swinburne the use of the mathematical concept of infinity for talking about God, we run a serious risk of not recognising this god as the God of theism. On the other hand, if we apply to infinity its more proper theological meaning, then we cannot say that God is the simplest being we could conceive.

A possible reply to this objection would be that the mathematical concept of infinity Swinburne uses in his theory is not necessarily incompatible with the theological concept Le Blanc emphasises; they would only be two different perspectives on the same logical object. From a mathematical point of view, God’s infinite nature is simple, because it does not require any additional information to be understood; it can be easily grasped. Any limit to the number of His attributes would demand explanation that is not needed in the case of traditional theism. This does not mean, so this reply goes, that this quality in God does not inspire fear and trembling in

the religious believer because of His transcendence. Now, God's infinite nature permits us to regard theism as a simple hypothesis because, from a mathematical point of view, it is psychologically accessible and because it is economical in its explanation. The problem, however, is that, from a theological point of view, that same quality of God is highly mysterious and extremely complex. Given that these psychological states (accessibility and mystery) and epistemological qualities (parsimony and complexity) are incompatible, the perspectives on God's infinite nature cannot both be assumed because they lead to irreconcilable assessments. In other words, if we opt for the mathematical perspective, we abandon the theological standpoint, which is much more important from a religious point of view.

In this chapter, I attempted to show that, although there is nothing in principle against using the Bayesian inferential apparatus to discuss the justification of theism, we could not say the same about the principle of simplicity. Indeed, as we saw above, the concept of simplicity is central to Swinburne's programme, since most of the serious criticisms of his application of Bayesianism to the justification of theism presented here are answered by an appeal to the principle of simplicity. However, the difficulties associated with simplicity in Swinburne's proposal are not restricted to its application to God's nature⁵. The formulation and operation of simplicity as an *a priori* epistemological concept faces its own problems. These pose even more serious challenges to Swinburne's proposal, which will be the focus of the next chapter.

⁵ For another interesting criticism of Swinburne's application of simplicity in the justification of theism see Wynn 1993.

Chapter 3 – Simplicity as Evidence of Truth

As I mentioned in Chapter 1, Swinburne's main reason for proposing the principle of simplicity is the curve-fitting problem. In his view, we need objective, universal criteria for selecting the relevant alternative theories in view of the infinite number of possible options to explain the same state of affairs (see Swinburne 1991: 55). In other words, given that the points in a graph, expressing the data we have about a certain phenomenon, can be covered by an infinite number of curves, we need objective, universal criteria to narrow down the choice to the relevant ones, which will then be assessed by science. The principle of simplicity is one of these criteria, and if we deny the acceptance of principles like it, Swinburne argues, we are faced with the undesirable alternative of considering science a non-rational enterprise, since the selection of theories from the potentially infinite set of options would not be guided by any objective reason. In other words, either we assume the principle of simplicity or we end up considering science an irrational activity.

Let us recall the way the principle of simplicity is stated. With it, Swinburne aims to show that,

[...] other things being equal – the simplest hypothesis proposed as an explanation of phenomena is more likely to be the true one than is any other available hypothesis, that its predictions are more likely to be true than those of any other available hypothesis, and that it is an ultimate a priori epistemic principle that simplicity is evidence of truth (Swinburne 1997b: 1).

Since I have already expounded and discussed Swinburne's applications of this principle in the two previous chapters, my present analysis will concentrate on general epistemological issues. In doing so, I will be questioning the very basis of one of his fundamental argumentative tools. To accomplish this, I will start with some standard objections to simplicity as a way of evaluating how true a proposition is. Then, we

will see how Swinburne's more recent statements on the matter – issued in *Simplicity as Evidence of Truth* (1997) and in *Epistemic Justification* (2001) – answer those criticisms. In the last two sections, I will present some critical responses to Swinburne's proposal.

1. Some Classic Objections against Simplicity as an Epistemological Principle

What Swinburne basically claims regarding simplicity is that this concept may be used to select theories in a principled way, and for epistemological reasons. In other words, simplicity is a way of evaluating rival theories in an objective and universally acceptable fashion. In addition, the reason simplicity is important relates to truth, that is, the simpler a hypothesis is the truer it is.

The epistemological value of simplicity has been the subject of considerable discussion in the recent history of philosophy. In this section, I will expound some of the most relevant criticisms against simplicity advanced by epistemologists such as Mario Bunge, Rom Harré and Mary Hesse in order to better clarify and evaluate Swinburne's position later on.

In a text that serves as the inspiration for many contemporary discussions of simplicity, Mario Bunge analyses the various elements involved in 'semiotic simplicity', i.e. the one relative to the signs that describe the things in the world¹. In general, Bunge's analysis focuses on the problem of whether we should prefer simplicity in scientific theories, discussing the difficulties related to the logical, semantic, epistemological and pragmatic dimensions of the concept.

¹ Bunge deliberately does not discuss the notion in an ontological context, i.e. the idea of natural simplicity. According to him, the discussion of semiotic simplicity precedes that of its ontological application (see Bunge 1963: 32).

From a logical point of view, talking about simplicity means discussing this concept in relation to terms, propositions and theories. Now, according to Bunge, scientific analysis generally does not involve simple terms. On the contrary, the more in depth research progresses the more complex tend to be the terms used. Requiring simplicity at this stage may block scientific analysis (see Bunge 1963:55). Moreover, the simplicity of a term like a predicate is contextual and may vary depending on the outcome of its elaboration according to transformation rules. Thus, apart from not being *prima facie* desirable, the criterion of simplicity applied to terms may lead to indefinite results.

The simplicity of propositions faces a similar problem. Despite attempts like Jeffrey's (1948) for example, Bunge suggests that we have no clear and uncontroversial measure for the complexity of a proposition yet (see Bunge 1963:63). The problem is not only the number of variables in an equation that should be taken into account, but also the degree of complexity a single symbol may have in an equation, which can distort completely the result of any formula meant to measure propositional simplicity universally. In other words, a proposition with fewer variables may have a much higher degree of complexity than another composed of more symbols. Apart from the difficulties related to propositions, Bunge continues, the attempt to measure the simplicity of theories faces the challenge that one and the same theory may be formulated in various alternative and equivalent ways that can vary in complexity. In addition, a simple theory may be based on complex assumptions and vice versa, which again makes challenging any measurement and comparison of theories with respect to simplicity (see Bunge 1963:64).

If logical simplicity seems to swing between lack of definition and lack of parameters for the comparison of alternatives, the prospects for this concept regarding

its semantic dimension do not seem more hopeful either, Bunge says. Intuitively, the notion of the semantic simplicity of a scientific theory refers to economy of presuppositions, i.e. the fewer concepts and propositions a theory presupposes the simpler it is. Yet counting presuppositions in a natural language demands that we consider the cultural and historical background of the theory in question as well as the relative familiarity of its concepts. However, these elements make the issue not only difficult to define, but also introduce a changing and relative parameter for assessing scientific hypotheses. ‘Consequently’, Bunge asserts, ‘S-simplicity [semantic simplicity] could be measured in formalized languages alone – i.e., where it is hardly an interesting problem’ (Bunge 1963:69). Semantically, then, according to Bunge, simplicity is either undefinable or uninteresting, providing two further reasons for not esteeming that characteristic so highly in scientific theories.

Bunge calls epistemological simplicity the parsimony in the use of ‘transcendent terms’, i.e. terms distant from sense-experience expressions. According to this criterion, the more abstract the words used by a theory, in the sense of not directly related to observational expressions, the more complex it is (see Bunge 1963:71). The problem with this kind of parsimony is that it neither corresponds to the actual trend that has been followed by modern science nor is it advisable in itself. Modern science since Galileo has employed more and more theoretical and non-observational terms. On the other hand, according to Bunge, empirically bound phrases like ‘this is metal’ (also called ‘phenomenalist phrases’), ‘[...] achieve epistemological simplicity, or triviality, at the cost of both syntactical complexity and epistemological shallowness: it takes longer to say less in phenomenalist languages. The latter are not economical, but just poor’ (Bunge 1963: 72).

Lastly, Bunge discusses the notion of simplicity from a pragmatic point of view, understood as ‘economy of work’. This last expression, however, may have more than one meaning. It can be a measure of the effort in constructing workable experiments or the use of more economic and suggestive symbols (notational simplicity) or even the search for an easy understanding or familiarity with a matter (Bunge 1963:77-78). The common link between these different aspects of pragmatic simplicity is that none of them is desirable in itself. If the aim of science is objective truth, it may be that the easiest ways of looking for it will not work. This is so because, as was said before, the deeper we research a subject the more difficult it tends to become and the less easy to express, operate and understand. Regarding psychological simplicity, Bunge is even more sceptical. For him, this is a culturally and educationally related feature, and consequently very difficult to state as an objective parameter for scientific activity in general. The striving for clarity and easy understanding is clearly secondary in comparison with depth and accuracy if our aim is not merely to teach established information but fundamentally to elaborate new knowledge (see Bunge 1963:76).

In conclusion, Mario Bunge does not see much hope in the project to find a unified and measurable concept of simplicity in general. According to Bunge, the occasional preference for simplicity is due more to other qualities related to scientific work like systemicity, cohesiveness, easy checking of consistency and of empirical testability. Moreover, he does not accept the idea that simplicity is the decisive criterion when it comes to choosing among alternative theories, for, in his words, ‘[...] other criteria, such as accuracy and depth – which are manifestly incompatible with simplicity – are far weightier. Even formal criteria, such as symmetry and

extensibility², may predominate over simplicity' (Bunge 1963:81). We cannot deny the intuition that simplicity is a worthwhile characteristic of a scientific theory, but this is only valid as long as it is put at the service of the general purpose of attaining truth. Even so, there still remains an intrinsic ambiguity in the notion. 'In short', Bunge argues, "'simplicity" is a multivocal term; not all kinds of simplicity are desirable or even compatible with one another; and the theory of simplicity, though still in a very rudimentary stage, threatens to become highly complex' (1963:83).

Rom Harré joins Bunge in the criticism of simplicity. According to Harré, the idea that the simpler a statement the more likely it is to be true is part of what he calls the attempt to anticipate nature, that is, the attempt to describe how the world is prior to any effort to inspect the phenomena empirically (see Harré 1965: 9). This attempt to anticipate nature through the concept of simplicity should be distinguished from pragmatic considerations of simplicity, which take it to be just a heuristic device with no truth value claim. In other words, a position like Swinburne's, which takes simplicity to be an *a priori* indication of the truth of a theory, should be distinguished from the use of this concept in purely pragmatic terms, that is, the selection of simple theories because they are easier to compare with others or to test empirically, for example. Harré does not rule out that simplicity might have a heuristic importance at some point in scientific research, but, he argues, it '[...] can hardly be said to supply a universal and necessary *a priori* principle of likelihood, even less of truth' (Harré 1965: 105).

Harré grounds his position in an argument similar to the one employed by Bunge. The first characteristic to be noted in simplicity, Harré claims, is that it is

² Extensibility is '[the] possibility of growth to cover new domains' (Bunge 1963:103). According to Bunge, this characteristic is generally incompatible with simplicity because the more economical a theory is the less extensible it tends to be in this sense.

essentially a comparative concept. When we say p is simple, we are in general saying that p is simpler than q regarding some aspect. Simplicity is generally a function of relative fewness of units or parts of a thing. Consequently, this assessment of relative fewness of parts depends on a method of analysis of the object concerned. A smaller number of relations in a theory h does not mean that h is simpler than g , for it may be the case that, although g has more relations among its component propositions, those relations are simpler than in h , which leaves the comparison indefinite. There is no *a priori* reason for choosing the fewness of relations instead of a less complicated web of relationships.

Algebraic simplicity in mathematical expressions of phenomena, however, seems to be a good general indication of what theory to choose. In these cases, the simplest curve possible to cover the points representing the behaviour of a certain phenomenon will probably be the best theory to take. Yet, Harré points out that we seldom find concrete cases of lines to fit in plotted results, where these results are the only evidence for finding the form of the curve. ‘In most scientific contexts’, Harré claims, ‘there is some guide from the larger body of knowledge as to what the curve is, and this may frequently be so paramount as to be used to adjust the error band so that the expected shape of curve is obtained’ (Harré 1965: 100). In other words, in concrete cases of the so-called ‘curve fitting problem’, simplicity is not the decisive criterion which enables us to tell rival theories apart, rather it is the background knowledge commonly recognised by the scientific community.

Despite partaking in Bunge and Harré’s scepticism concerning the simplicity principle in an earlier article (see Hesse 1967), Mary Hesse later defended a more positive approach to this epistemological concept. However, before advancing her position regarding the place of that principle in her probabilistic theory of scientific

inference, Hesse delineates carefully the many possible facets of the notion. First of all, it is necessary to distinguish between subjective and objective simplicity. Only the second one – theory choice regarding relative truth-value – is philosophically interesting for her purposes. Subjective simplicity if taken to refer to pragmatic or psychological preferences for certain kinds of theories because they are more workable or convenient, is not only irrelevant to that aim in philosophy of science but also difficult to make precise (see Hesse 1974: 222).

Another facet she dismisses is notational simplicity. Two expressions might be notationally different, but logically equivalent, which makes them equivalent as regards their truth claims and so irrelevant with respect to the theory choice problem. So, the relevant concept of simplicity for the theory of scientific inference is the one relative to the logical and conceptual structure of theories that have distinctive factual consequences (see Hesse 1974: 225).

Yet within the objective simplicity domain, and considering only hypotheses with different factual content, we should also distinguish between simplicity of content and simplicity of economy. Simplicity of content is a matter of fewer concepts and fewer premises in a theory that, because it makes fewer claims about the world, is taken to be more likely to be true than its rivals. Simplicity of content has to do with the generality of scientific theories. In claiming that the less general the more likely a theory is, and that we should look for likely theories, this application of the simplicity principle contradicts the widely accepted idea that science should aim for increasingly general theories. This is why Popper objects to the association between simplicity and high probability, suggesting that the simpler a theory the easier to test it is, and, consequently, the less probable it is in *a priori* terms. However, in Hesse's

view, Popper's position only makes sense as regards simplicity of content (see Hesse 1974: 227).

Simplicity as economy, on the other hand, refers not to the expected generality of scientific theories, but to their specificity, that is, to being a brief way to explain as much detail as possible about the facts at issue. In other words, simplicity as economy is related to the property of scientific theories according to which they yield more probable predictions about the facts. They are simple in the sense of being good summaries of what happens in the world. 'Thus', Hesse claims, 'the directive of a probabilistic account of theory choice is not "Choose the most probable theory", but "Of two *conflicting* theories of *equal* relevant content, generally choose that which yields more probable predictions"' (Hesse 1974: 228). In this way, the search for the most probable is not contrary to what we expect from a scientific theory, rather it conforms to the aim of more detailed and correct predictions in science.

According to Hesse, economy should not be taken as a universal criterion for theory choice. This is so because the cases where theories are selected merely on the basis of simplicity are rare in the history of science. In addition, the application of this criterion is local in the probabilistic account, for there is no single concept of simplicity which scientists can resort to in their research. In other words, each case is particular and the general trend will be not to search for simpler theories but to seek for more data and more comprehensive theories. Moreover, she argues, in a remark that will prove crucial for my purposes, that there is no transcendental argument in favour of the option for simple theories. The only reason the probabilistic approach can suggest is that the preference for simplicity, if it is not purely a pragmatic issue, can be justified on the presupposition of the homogeneity of the events in the universe, for which inductivism cannot provide any *a priori* justification. So,

scientists opt for simple theories because of certain ontological commitments they *de facto* presuppose, and not because the principle of simplicity is an independent and necessary truth (see Hesse 1974: 256).

2. Swinburne's Position Regarding Simplicity in view of its Critics

How does Swinburne's account fare in the light of the above objections? As we saw in the section above, one of the main points of Bunge's criticism of simplicity was that it has too many different meanings. In view of that polysemy, Bunge opted for analysing the value of simplicity as a guide to science in what he called the logical, semantic, epistemological and pragmatic domains. Now, in Swinburne's recent statements (1997 and 2001), simplicity is defined according to the following facets:

[...] (1) fewness of entities and properties, (2) fewness of kinds of entities and properties, (3) more terms which can be understood without reference to other terms (i.e. more terms describing things more readily observable), (4) fewer laws, (5) individual laws relating fewer variables, (6) mathematical simplicity – i.e. fewer terms in its equations; and more mathematical entities and relations which can be understood without reference to other entities (e.g. more primitive relations, such as multiplication rather than power; vectors rather than tensors). (Swinburne 2000:1).

Thus, in Bunge's classification, Swinburne's concept of simplicity is restricted to the logical (facets 6, 3, 4 and 5) and semantic domains (facet 2 – if we take 'kinds' as concepts – and 6). Facet 1 cannot be included in Bunge's categorisation, since it does not refer to signs, but to things in the world. The first facet in Swinburne's concept of simplicity, then, is not a merely conceptual or linguistic issue, but an ontological matter. On the other hand, Swinburne does not mention the pragmatic aspect of simplicity – given that he is concerned with its evidential value – and does not accept the epistemological aspect of simple theories in Bunge's sense. For Bunge, epistemological simplicity has to do with economy in the use of non-empirical

expressions in scientific theories. Swinburne would probably agree with Bunge's rejection of epistemological simplicity in this sense, since he argues elsewhere against phenomenalism (see Swinburne 1994: 4-5 and 1993: 22-23).

In addition to this stress on principally logical and semantic aspects, Swinburne's concept of simplicity is predominantly quantitative. As I noticed in Chapter 1.2.2 (p. 24), this would be a way of avoiding the ambiguities contained in more qualitative accounts given before, where simplicity was also defined in terms of 'coherence', 'naturalness' and 'neatness' (see, respectively, Swinburne 1973: 6, 1991: 94 and 93), for example. Furthermore, this narrower and more precise definition of simplicity would be a way of making this concept more applicable to the task of selecting the most probable theory from a set of rivals. Quantities tend to be more objectively comparable than qualities and for a 'hard rationalism programme' objectivity is crucial.

If the limitation of simplicity to quantitative aspects is a way to respond to the criticisms of this concept regarding definition, this also provides an answer to the problem of operation. According to the principle of simplicity, all other things being equal, the simplest theory will be the most probably true, that is, faced with hypotheses of the same explanatory power, the scientist has only to pick up the simplest if he is aiming at truth. As a result, if the definition of simplicity is mathematically oriented, its application will be straightforward and objective, dispensing with personal judgements, a point that will be crucial for its justification as an epistemological principle.

Even while admitting that science progresses towards an increasing theoretical complexification, Swinburne still believes his principle applies. The trend towards complexification we observe in the history of science does not contradict the principle

of simplicity because that tendency is due to the search for theories that yield the data, but always in the simplest way. In other words, the principle still stands, because its condition is that we should opt for the simplest hypothesis given a set of proposals that explain the data equally well. So, the principle of simplicity should always be taken in conjunction with the criterion of explanatory power: the simplest among the hypotheses capable of explaining the evidence available is the most likely to be true (see Swinburne 1997b: 19).

It is from this idea that Swinburne produces the following reply to Colin Howson, according to whom simple economic forecasting hypotheses are generally rejected by economists on the grounds that they are unlikely:

But the reason why such hypotheses are very unlikely is that very simple hypotheses have worked poorly in the past in social and economic theory, while the simplest among hypotheses of a certain kind and degree of complexity have done better; and so a new hypothesis, to fit well with such hypotheses, will have to postulate the same kinds of complex interactions – in other words, a new relatively complex hypothesis will make for a simpler overall theory than does a new very simple hypothesis (Swinburne 1997b: 63, note 20).

In other words, the economists do not reject theories because they are simple, but because they do not account for the data properly. It is not simplicity that indicates their implausibility, but their poor predictive power. According to Swinburne, the economists' practice does not contradict the principle of simplicity because a complex hypothesis is only accepted if it is the simplest theory available to explain the facts. The criterion of looking for the simplest alternative among those with the same explanatory power is still being applied in this kind of situation.

Assuming that Swinburne's theory of simplicity can answer to the problems of definition and application in the way above, we come then to the question of justifying why simplicity is an indication of true theories, and why scientists should obey the principle in their selection of hypotheses. Now, in his defence of the

confirmatory value of simplicity, Swinburne admits he does not have a theory that permits us to say that simplicity is in all contexts more important than the other criteria for choosing hypotheses (see Swinburne 1997b: 14-5). He restricts his defence of simplicity to the case of large-scale theories only, and proceeds by comparing the role of that criterion with three others: explanatory power, fitness with background knowledge and scope or content. According to Swinburne, while explanatory power and background knowledge are *a posteriori* criteria, which require contingent empirical information to operate, scope and simplicity would be *a priori* parameters governing a rational choice amongst rival theories (Swinburne 1997b: 12-3). For Swinburne, large-scale theories, that is, theories at the boundaries of scientific enquiry have to be evaluated in *a priori* terms only. This was the case with Newton's laws of gravitation, for example, when there was no background knowledge available. They had to be assessed mainly in relation to simplicity (see Swinburne 1997b: 35). This is so in all cases where the alternative hypotheses have the same explanatory power and the same scope.

With regard to the relationship between simplicity and scope, Swinburne's position is comparable to Hesse's, as seen in the previous section. As we saw, Hesse distinguishes her position from Popper's in stating that her concept is simplicity as economy or fewness of properties, and that simplicity should be understood in the context of theories of equal content, that is, which have the same degree of generality. In Popper's sense, the simplicity of a theory refers to its openness to falsification (see Popper 1972: 142). Taken in this sense – contrary to Swinburne – the simpler a theory the less probable it will be, since, in Popper's view, the simpler the theory the larger its scope. Swinburne's view is not that a theory is simpler if it has more content, and is thus easier to falsify, but rather that the less content it has the simpler it

is (see Swinburne 1997b: 20). In addition, he notices that ‘[...] greater ability to yield the data or greater simplicity may come in as compensating factors to make a difference to which is the more probable [...]’ (Swinburne 1997b: 14). In other words, for Swinburne, simplicity should not be confused with scope as in Popper, and the simplicity and explanatory power of a hypothesis frequently counterbalance the improbability due to its large scope.

Now, if we do not dispute Swinburne’s position regarding the relationship between scope and simplicity, using only the four criteria considered by him and the conditions of analysis he states (large-scale theories and same explanatory power), then the favourable conclusion regarding simplicity sounds trivial, since simplicity is the only criterion that remains. Moreover, we could argue with Hesse and Harré that this kind of theory selection situation has been extremely rare in science and that the scenario Swinburne sets up is in fact too artificial.

However, Swinburne has an additional argument in favour of simplicity that, if successful, strengthens his case considerably. He affirms that even when we consider situations where there is relevant background knowledge, simplicity is still the main criterion to be considered, because we need the concept of simplicity in order to evaluate how well a theory fits with background knowledge. In Swinburne’s words:

But the second and all important point is that where there is background knowledge, where there are theories of neighbouring fields, it is the criterion of simplicity which determines which proposed theory “fits best” with those neighbouring theories. ‘Fitting better’ is ‘fitting more simply’, and thus making for a simpler overall view of the world (Swinburne 1997b: 40).

Asserting that the criterion of fitness with background knowledge depends upon simplicity is a very substantial claim which, if successful, would be a strong argument in favour of the relevance of simplicity in theory choice contexts. It is worth then following Swinburne’s arguments here in more depth.

Swinburne's main reason for rating simplicity more highly than background knowledge in general is that the employment of the latter presupposes the former. When we state that some hypothesis *h* is plausible because it is more adequate to what we know nowadays, this is not sufficient for concluding that *h* should be preferred. In fact, we could say *h* fits with background knowledge in very weird and complicated ways, by supposing, for example, that the phenomenon *e* the hypothesis aims to explain is completely different from what has been observed so far. Now, scientists do not reason this way generally, Swinburne claims, because this sort of supposition regarding *e* is absurd, and it is absurd because it implies a too complex picture of the world. It is then in view of simplicity that we dismiss theories that do not harmonise with our accumulated information. For Swinburne,

It is the criterion of simplicity which tells us to have theories which 'mesh' with theories of neighbouring and wider fields, and it does so by insisting that overall theories be as simple as possible. The criterion of background knowledge [...] boils down to the criteria of yielding the data and of simplicity (see Swinburne 1997b: 41).

It is important to analyse the role played by the ontological claim that the world is simple in the justification of simplicity as an epistemic criterion for theory choice. In Swinburne's view, scientists prefer to explain a phenomenon *e* on the assumption that natural events will behave generally the same way they have been observed to happen. 'In holding simpler theories to be more probable than complex theories', Swinburne claims, 'the inquirer is holding it to be more probable that the world as a whole is simple than that it is complex' (Swinburne 1997b: 42). So, when a hypothesis is discarded because it does not fit with the background knowledge, this is justified by the idea that natural events happen according to an ordered pattern that can be predicted. In other words, we are initially reluctant to accept weird theories because they contradict the simplicity we assume in the world. Indeed, even the

search for the simplest theory possible only makes sense in view of the notion that the new range of phenomena we are investigating will reveal the same overall type of complexity as revealed in the other fields of natural research (see Swinburne 1997b: 40). Underneath all this reasoning is the idea that the world is fundamentally simple. Simplicity is then the paramount criterion among those most commonly used to select the most probable theory, not only because it is important on its own, but also because it is implicitly assumed in the application of the background knowledge criterion.

All these ideas about how scientists have used the success of certain types of theories in the past to justify the centrality of simplicity in comparison with other criteria may give the impression that Swinburne justifies his principle on an inductive basis. Yet, for him, we can neither ground the simplicity principle on the basis of its use in the history of science nor claim that it is logically deducible from an analytic truth (see Swinburne 1997b: 44). Swinburne presents two reasons for dismissing the justification of simplicity based on the history of science. Firstly, it is doubtful that the simplest hypothesis has proved to be the best predictor. In fact, there are many examples of the contrary. Secondly, the inductive justification of simplicity commits the fallacy of circularity, for in holding that we rely on simplicity given past results the argument presupposes that we extrapolate from past data to the simplest theory in the simplest way (see Swinburne 1997b: 46-7). In other words, the *a posteriori* defence of simplicity supposes that scientists in general choose the shortest and least complicated way of reaching their conclusions in a inductive manner, that is, they circularly require simplicity to understand why people use this criterion in their probabilistic reasoning. That is why Swinburne opts for saying that the simplicity principle is a synthetic *a priori* truth, that is, a necessary requirement for thinking of the scientific enterprise as a rational activity (see Swinburne 1997b: 51). In other

words, the principle of simplicity is not justified as a logical necessity or as an empirical truth. It should be accepted because it is a condition for rationality in science, that is, without a criterion like this, the crucial scientific activity of theory selection becomes arbitrary and irrational, which contradicts the normal view of science we have.

In contrast to Swinburne, Mary Hesse's intention was not to justify simplicity, but to describe how scientists usually employ this concept. She even provides a lengthy example of the assumptions in the choice of Einstein's principle of relativity instead of Lorenz's modification of classical electrodynamics on the basis of simplicity (see Hesse 1974: 239-255). Hesse has no need to suppose there are strong compelling reasons to ground the use of simplicity for assigning a prior probability to a hypothesis. Far from the hard rationalism programme of Swinburne based on a logical theory of probability, she adopts a personalistic account of Bayesianism (see Hesse 1974: 6, see also Chapter 7 below). Simplicity for her is not a universal criterion, but merely a local constraint, given the particular context of the scientific debate at issue, whence the concrete contours of simplicity will emerge.

3. New Objections against Swinburne's Principle of Simplicity

In this section I intend to offer some additional objections against Swinburne's principle of simplicity that take into account the way this principle stands in view of the criticisms presented in section 1. My critical analysis of the principle of simplicity will follow the same sequence of section 2, that is, I will discuss in turn the limits of this principle as regards its definition, application and justification.

As to its definition, Swinburne's updated conception of the principle of simplicity may be accused of two defects. First, the restrictions imposed on the

concept by Swinburne make its application to the hypothesis of theism difficult. Arguments based on the concept of simplicity as naturalness, such as that the divine attributes fit neatly together (see Swinburne 1991: 93) and that the choice of an omnipotent agent that fulfils his decision directly is ‘the most natural kind of stopping-place for explanation’ (see Swinburne 1991: 103) cannot be used any more, since this facet of simplicity does not figure in Swinburne’s new definition. In addition, if Jill Le Blanc’s arguments against the reduction of the theological concept of infinity to the mathematical one are correct (see Chapter 2.3, pp.60ff), then the main argument in favour of the simplicity of theism that is allowed in the more delimited conception of simplicity has a serious defect. As we saw, if theism is a simple hypothesis because God’s infinitude is reduced to the mathematical sense of infinity, then we risk not being able to recognise this hypothesis as the object of faith of religious believers. The problem is that the theological concept of infinitude is incompatible with arguing that, because God is infinite, theism is a simple theory in the sense of being more comprehensible, of not needing any additional information in order to be understood. If this incompatibility really holds, then Swinburne’s concept of God will be at odds with the theology of the great monotheistic religions. In sum, Swinburne’s updated definition of simplicity can be criticised both for continuing to have too many facets and for being even more difficult to apply to the justification of theism. Second, even the restriction of the concept to quantitative and objective aspects does not free it from having many different meanings or facets. It is true that they are related to each other by the idea of economy in the sense of ‘having few elements’, but this connection is certainly very weak, since the elements that are said to be few are very different from each other. In other words, in Swinburne’s more recent publications mentioned above we may have a more unified theory of the nature

of simplicity, but this is still multifaceted, which creates problems for an impersonal and straightforward application of the principle, as I will explain below.

One of the problems the simplicity principle faces regarding its application stems from its multifaceted nature. The difficulty is that, even considering the artificial scenario of a theory choice situation in which the rival hypotheses explain the data equally well, bear the same scope and have no neighbouring area in order to assess their fitness with background knowledge, the criterion of simplicity is still not objectively and directly applicable as Swinburne postulates it to be. Still, if the concept has many facets, it is possible that they clash with each other at some point, i.e. each of the rival theories can be assessed as the simplest hypothesis according to different facets. In this kind of situation, the criterion of simplicity cannot be applied directly, since it can lead to contradictory results.

Swinburne notices this problem as well, but maintains that ‘it is, I suggest, normally objectively clear which is the simplest formulation of a theory and which theory is the simplest, when simplest formulations differ only in respect of one facet of simplicity’ (Swinburne 1997b:30). This objectivity in sorting the simplest theory when there is a conflict of facets is a consequence of the consensus we normally observe in the scientific community, he claims (see Swinburne 1997b:30). Yet what does this consensus consist in? Is it not merely the sharing of the same background knowledge? In other words, Swinburne claims the clashes of contradictory judgements regarding the simplicity of rival theories will be solved by recourse to a set of positions all scientists agree on, which makes clear in each context which is the most important facet of simplicity to consider. Yet why not call this set of undisputed propositions the background knowledge shared by the scientific community? In fact,

this very question makes us turn to Swinburne's conception of background knowledge itself.

In his description of the four main criteria for theory choice, Swinburne asserts that 'simplicity is the only criterion of choice among hypotheses of equal scope with equal ability to yield the data, when there is no background evidence – that is, evidence of how things behave in neighbouring fields of enquiry' (Swinburne 2001a: 93, emphasis mine). In a similar context, but in a much earlier book, he affirms: 'the criterion of fitting in with background knowledge is clearly of less and less importance in so far as the theory postulated is of wider and wider application (i.e. claims to tell us what there is in all fields), for then there are less and less other fields with whose theories it has to fit' (Swinburne 1991: 53). In other words, Swinburne's concept of background knowledge includes only empirical theories both of the research area concerned and of neighbouring fields. When we are dealing with large scale theories in the borders of scientific investigation we cannot resort to the criterion of background knowledge any longer. Yet, surely we can consider mathematics, deductive logic laws, heuristic values and inductive principles as part of the background knowledge shared by the scientific community. They are neither tautologies nor empirical data, but can clearly be thought of as part of the body of information that defines a certain area or a whole theoretical activity as scientific. In other words, they constitute much of the knowledge someone is supposed to hold in order to be considered part of the scientific community.

If my observations above are correct then we can say that the concept of background knowledge Swinburne uses (when not discussing the theistic hypothesis) is too restrictive in admitting only empirical information. However, if it is right to include in that concept non-empirical knowledge such as mathematical ideas and

inductive principles, for example, then even the principle of simplicity can be considered part of the background knowledge according to which the scientific community will assess rival accounts of the same set of data. In this case, then, the relationship between simplicity and background knowledge can be seen to be the inverse of Swinburne's account of it, that is, instead of the background knowledge criterion needing the concept of simplicity in order to be applied, it is the principle of simplicity that needs background knowledge to be applicable in conflicting situations.

The above appears to be the early position assumed by Swinburne. He stated that even considering theories much less influenced by historical and cultural changes, we still need a kind of background knowledge to assess theories with mathematical form:

[...] although there are these transcultural rules for comparing in respect of simplicity incompatible universal nomological propositions they do not seem able to deal with the vast majority of cases...In the vast majority of the cases the greater simplicity of a theory consists in the greater familiarity of its concepts. In such cases we cannot really talk about one theory being simpler absolutely than another theory, but only simpler for this or that cultural group. (Swinburne 1973:117-8)

In other words, Swinburne once recognised that, at least in most cases, there are no objective rules to guide the choice of a hypothesis in terms of simplicity when all alternatives fit the other requisites of a good explanation equally well. Simplicity becomes a question of familiarity with concepts, expressions and formulae employed, which is quite clearly relative to a particular epistemic community.

There is an additional reason for not considering the principle of simplicity to be directly and impersonally applicable. Not only is the use of the simplicity principle dependent on background knowledge, but also it is highly controversial to say that a hypothesis is always *a priori* more probable than another because of its simplicity. Indeed, too simple a theory is frequently considered implausible even

before we take into account the phenomena it aims to explain. We give to such a hypothesis a low plausibility on the charge of it being simplistic. Indeed, instead of Swinburne's linear gradation for evaluating a hypothesis in view of simplicity so that the simplest is the most probable in principle, it seems more correct to take simplicity as medium optimum above which we have complex theories and below which we have simplistic ones. In this case, simplicity would enhance the probability of a theory when it has the right degree of this quality, that is, neither too little nor too much.

As a result, the correct statement of the principle of simplicity should not be 'other things being equal the simplest hypothesis is the most likely to be true' but instead that 'the one which has the correct amount of simplicity, that is, which is neither deficient in this property (the complex ones) nor excessive in it (the simplistic ones), should be *a priori* the most probable'. If so, however, the application of the criterion for estimating prior probabilities is far from straightforward. It requires familiarity with the prevailing conception about what is the optimum of simplicity in the research area we are referring to in order to sustain a trained judgement. In fact, we can even agree with Swinburne that simplicity is not a sheer methodological or pragmatic criterion, but that it has something to do with truth. However, the definition of what simplicity amounts to and the application of this parameter for assessing the plausibility of a hypothesis depend on the background knowledge shared by a given community of researchers.

As in a chain reaction, the problems I claim to exist in Swinburne's definition of the simplicity principle generate difficulties for the kind of application he suggests for it, which, in turn create obstacles for the justification of it as an epistemological postulate. As we saw in the previous section, one of the justifications for the idea that

simplicity is an indication of truth is that this quality is presupposed in the application of the background knowledge criterion. Yet, as I argued above, there is reason to think that in order to apply the criterion of simplicity we frequently resort to the background knowledge shared by the scientific community, although conceived in a way different from Swinburne's. In fact we could counter Swinburne's claim regarding the relationship between simplicity and background knowledge by saying that the former is supposed in the latter only marginally. Recall that for Swinburne, when we say a theory is plausible because it fits in well with what we know, we mean that it does it in the simplest way (see Swinburne 1997b: 41).

However, even if simplicity helps in spelling out the operation of the criterion of background knowledge, this is not the only concept involved, and not even the most central one. Simplicity may express the way a hypothesis h relates to a body of established information so that we evaluate h as plausible, but it does not say anything about the nature of the criterion of fitness with background knowledge. In other words, the criterion of fitness cannot be reduced to the one of simplicity because its definition does not include simplicity as a prime factor. Fitness consists in a theory being logically consistent with an accepted body of information. Certainly, there are both complex and simple ways for a set of propositions p to be compatible with another set q , but this is only a qualification of a relationship defined by the attribute of consistency.

The main argument I would like to suggest to counter Swinburne's justification of the epistemological value of the simplicity principle is that even if we accept that theory selection in science should follow *a priori* criteria, these do not need to be universal and given from a neutral, a-historical, logical point of view. An important contemporary epistemologist who agrees with the epistemological

importance of simplicity but disagrees with Swinburne regarding its universality and impersonality is Elliot Sober.

Sober prefers to describe his position in more ontological terms, arguing that ‘The principle of parsimony counsels that *we should hypothesise that an entity does not exist* if its postulation is to no explanatory point’ (Sober 1981: 145). In other words, simplicity is an important criterion in deciding which of the hypotheses faced by the scientist is the best explanation for the observations he aims to explain. It is a tool to be used in what we can call abduction or inference to the best explanation (see Sober 1988: 50). According to Sober, simplicity has been thought of since Hume as a principle that takes us from observations to explanatory theories. ‘Given a set of competing hypotheses’, Sober claims, ‘simplicity and consistency with the evidence determine which of these hypotheses is to count as “best”’ (Sober 1988: 59). So far, it seems, there is no difference between Sober and Swinburne’s positions³. Their disagreement, however, becomes apparent when Sober affirms that

My claim is that whenever simplicity performs this function, it embodies empirical background assumptions about the way the world is. Explicit mention of empirical background assumptions is often suppressed when an argument appeals to simplicity or parsimony, but substantive background assumptions there must be nonetheless (Sober 1988: 59-60)

In other words, Sober postulates that, if simplicity is an indication of truth and if truth is understood as correspondence between proposition and reality, then the principle of simplicity should not be thought of as purely methodological, but as having an ontological content instead. Putting it another way, simplicity can only be evidence

³ Another curious convergence between Swinburne and Sober’s theory of simplicity is in the way the former justifies the simplicity of infinitude. As we saw in Chapter 2, infinite quantities are simple because they require less extra information in order to be understood. Now, the idea that the less extra information required by a concept or theory the simpler it is corresponds exactly to the notion of simplicity as informativeness developed by Sober in (1975), but which is surprisingly criticised by Swinburne (see Swinburne 1997: 22, and 2001a: 86n).

of truth in a correspondence sense of truth if we consider the world to be fundamentally simple.

In fact, Swinburne also holds that scientists presuppose the thesis that nature is simple in order to engage in the task of explaining evidence, as we saw above. In contrast with Swinburne, however, Sober thinks this principle of uniformity of nature is too vague and, in fact too mistaken to be taken seriously if stated in general terms. According to Sober, we do not accept that nature is uniform in all aspects, since we believe that there is multiplicity and variation in the way the world is (see Sober 1988: 55). He suggests, then, that the ontological simplicity presupposed in scientific research should not be thought of in general terms, but as confined to the investigative situation and the subject matter under scrutiny. In other words, simplicity is a local criterion, not a general one, as in Hesse's proposal above.

Sober's suggestion arises from the study of the elements involved in the choice of a theory to explain phylogenetic relationships in biology, i.e. how to classify different species into more comprehensive groups. One of the hypotheses defended in the current debate is cladism, which states that phylogenetic relationships should be inferred not from overall similarities (as pheneticism posits) but from a certain type of resemblance, namely genealogical likeness, and nothing else (see Sober 1988:7). According to Sober, cladism appeals to a principle of simplicity in postulating that '[...] the best supported phylogenetic hypothesis is the one that requires the fewest evolutionary changes' (Sober 1988:31). Simplicity is then understood here as ontological parsimony, that is, paucity in the assumptions about what the world is like in its evolutionary changes.

In contrast with the status of cladistic parsimony, which is defined in terms that are expressed precisely in the specific discussion for the scientists involved, no

global concept of simplicity that is completely plausible as a constraint on all scientific inferential contexts could be formulated yet, Sober claims (see Sober 1988: 39). In other words, inferences to the best explanation may have the same common structure, but they do not presuppose the same general empirical assumption, and, consequently the same concept of simplicity. ‘Appeals to simplicity’, argues Sober, ‘must count as highly abstract and abbreviated summaries of background assumptions about the empirical subject and inference problem one faces. Such appeals should not be viewed as unmediated applications of some perfectly general and *a priori* principle of scientific reason’ (Sober 1988: 69)⁴. In sum, if Sober is correct in his reasoning, then we can conceive of simplicity as having epistemological value, but without constituting a universal and impersonal principle of rationality.

Another important argument advanced by Swinburne in defence of the criterion of simplicity is that this principle is a transcendental condition for theory selection in science to be considered rational. However, would a scientist be irrational if he opted for a more complex theory? This question presupposes that we can tell very clearly and universally when a hypothesis is simple relative to another one. However, all I said in the few previous paragraphs echoing Sober’s position is that this judgement is not possible in the absence of background knowledge of the specific discussion. Thus, a certain theory may be chosen as simple according to one facet but could be classified as complex according to another one, and the conflict can only be settled by consulting the relevant background knowledge. As a result, we had

⁴ Day & Kincaid share the same view as Sober in their comparison between simplicity and inference to the best explanation (IBE), when they assert: ‘Like IBE, simplicity is supposed to be a perfectly general principle for inferring the best hypothesis given the data. Like IBE, simplicity is often invoked to support philosophical and metaphysical theses. And, like IBE, simplicity is often invoked without much explication, for it, too, has resisted any general analysis. We think there is good reason that simplicity has these characteristics: it, too, is not a general inference principle but rather an inference based on background information, often contextually specific information’ (Day & Kincaid 1994: 283).

better view simplicity as a concept whose content and application depend on the specific context of scientific debate.

Yet this view of simplicity does not help Swinburne very much. Recall that his hard rationalism program needs a criterion for assigning the prior probability of theism that could be applied universally and impersonally. If simplicity is contextual and dependent on the judgement of the scientific community for its application, as Sober has in fact claimed, then it does not do for Swinburne's purposes. In other words, we can meet the need of objectivity in the selection of theories in science using *a priori* criteria such as simplicity, fruitfulness, and others not mentioned by Swinburne without postulating that they are universal and totally impersonal. It can be argued then that Swinburne's principle of simplicity is not justified by the need for objective principles in theory choice, since we can be assured that this activity is directed by criteria, albeit that they are contextual and related to the judgement of a given research community.

In sum, in this section I intended to argue that even after the improvements made to Swinburne's principle of simplicity, there are still considerable difficulties with the definition and application of this criterion for theory choice. Not only are there reasons to contest some justifications Swinburne suggests in favour of the epistemological value of simplicity, but also we could take up his idea of simplicity as an indication of truth without endorsing his hard rationalism program in epistemology. These could be reasons enough to abandon his approach to Bayesian epistemology, but I will present further reasons in the next section, devoted precisely to the relationship between Swinburne's simplicity principle and Bayesian epistemology.

4. Simplicity and Bayes's Theorem

In addition to the observations about the simplicity principle made above, it is important to discuss the relationship between this principle and Bayes's theorem before concluding this chapter. In this way we bring together the two main strands of Swinburne's epistemology, particularly in its application to the belief that there is a God. On this matter, Swinburne seems at first to state the position commonly held in Bayesian circles, according to which simplicity factors in the ascription of a prior probability to the hypothesis under assessment⁵. Formally speaking we have simplicity intervening in $P(h/k)$, the prior probability, where h is the hypothesis and k is the background knowledge. However, Swinburne defends a quite original position in this matter when he asserts:

If k contains empirical background knowledge, then $P(h/k)$ will depend in part on how well h fits k , which – as we have seen – is a matter of how simple is the conjunction ($h \& k$). But if we put all the empirical data into e [the evidence we are considering to assess h], then k becomes some bare tautology. In that case $P(h/k)$ is what we may call the intrinsic probability of h ; it will depend solely on factors intrinsic to h . That there is this crucial a priori element affecting the probability of h is the claim of this paper, which affirms that it is a function of simplicity and (inversely) of content (Swinburne 1997b:55).

In the case where there is empirical information in k , then simplicity intervenes in judging how the data fit with background knowledge. Yet, where we put in the background knowledge only analytical truths, then k becomes irrelevant (see Swinburne 1991:16 and 2001a:104), and the prior probability of h will be a question of 'intrinsic probability', as Swinburne calls it. In other words, the intrinsic probability of h ($P(h)$) will depend only on factors that affect the hypothetical proposition on its own, such as simplicity and scope.

⁵ Swinburne's position that takes simplicity as a major constraint to attribute prior probability values in a impersonal way seems to be far from widespread among Bayesian philosophers of science. Nevertheless, a Bayesian approach to simplicity that basically agrees with that of Swinburne can be found, for example, in Bandyopadhyay & Boik 1999: S398.

Since k in the justification of theism is assumed to consist of only tautologies, we are left with the idea of ‘intrinsic probability’ as expounded above. The reason simplicity enters into the intrinsic probability of h in this case as $P(h)$ is that simplicity cannot be part of k in Swinburne’s point of view, because k contains only analytic truths and irrelevant information whereas simplicity is synthetic *a priori* and very relevant. In other words, the principle of simplicity cannot be a part of k because 1) it is not a tautology (since its denial does not entail any contradiction); and 2) Swinburne states that k in the case of theism consists of tautologies and irrelevant information. He does not want synthetic, ampliative truths in k , yet simplicity cannot be an empirical matter, as we saw last section.

However, the idea that simplicity is an *a priori* constraint on the intrinsic probability of hypothesis h entails that the principle can have no formal direct representation in Bayes’s theorem. In other words, ‘ $P(h)$ ’ does not express the probability of h given the principle of simplicity in any clear way. Formally speaking, this would be something like $P(h/\text{synthetic } a \text{ priori principles of rationality})$, which is not part of the theorem. Thus, since the criterion of simplicity is not part of the background knowledge in Swinburne’s view, it cannot be explicitly represented in Bayes’s theorem, at least given the way Swinburne established the principle. If so, then this would be a very undesirable result for his hard rationalism program, which emphasises the importance of formal reasoning as a way to confer objectivity to the justification of theism.

However, according to the Finnish epistemologist Ikka Niiniluoto, there are two ways of integrating simplicity in Bayes’s formula. One of them is to treat the simplicity of a hypothesis as an additional factor that is independent of other desiderata of theory formation, and deserves to be calculated in a particular way. An

example of this treatment is in E. Kaila's formula that gives the relative simplicity RS of a hypothesis h given evidence e as defined by: $RS(h,e) = syst(h,e)/K(h)$, where ' $syst(h,e)$ ' is the systematic power of h given e and $K(h)$, the complexity of h (see Niiniluoto 1994: 158). The 'systematic power' of h given e is equivalent to Swinburne's 'explanatory power' of h over e , that is, the extent to which evidence e becomes explained by the hypothesis h . After calculating the simplicity of h in a formula like Kaila's, we only need consider the result in the comparative assessment of the prior probability of h and its rivals. This way, simplicity is explicitly formalised in the probabilistic calculation.

The second form of dealing with simplicity in Bayes's theorem suggested by Niiniluoto treats simplicity as already built into rational probabilities, not needing any separate or formal treatment apart from being implicit in the Bayesian calculation (see Niiniluoto 1994: 160). Simplicity is then not formally and explicitly calculated, but is indirectly taken in Bayes's formula as a plausibility consideration. Even so, the clearest way to represent simplicity in the theorem according to this second approach is by considering it as part of k in $P(h/k)$, as in Salmon (1998), a suggestion that will be developed better in Chapter 7.4 (pp.247-8).

Swinburne's approach to simplicity in Bayes's theorem fits in with the second of the positions above, that is, he does not calculate simplicity separately, but takes it as built into the prior probability of h , although he expresses it in a very unclear way. However, granting that there is a univocal notion of simplicity involved and only one form of applying it – a very doubtful postulate as we have been arguing along this chapter – simplicity will only be decisive to the posterior probability of a hypothesis in two cases. The first one is when the rival hypotheses both entail the evidence concerned, that is, given h and h' , $P(h/e) > P(h'/e)$ because h is simpler than h' only

when $h \Rightarrow e$ (i.e. h entails e) and $h' \Rightarrow e$, granted higher simplicity means higher prior probability. However, Swinburne does not generally work with the idea of entailment in Bayes's theorem. In his approach, the hypothesis does not make evidence certain, but merely probable i.e. instead of $h \Rightarrow e$ we have $0 < P(e/h) < 1$. This sends us to the second case where simplicity is decisive for the posterior probability of a hypothesis in Bayes's theorem, that is, when the likelihoods of h and h' are equivalent i.e. $P(e/h) = P(e/h')$. In other words, it is when the alternative hypotheses explain the data equally well that we need to resort to simplicity to choose *a priori* which is the most probable⁶.

As I observed at the beginning of this chapter, Swinburne adduces the problem of choosing among different equally possible alternatives to explain the same set of data in order to justify his simplicity principle. 'Without the criterion of simplicity', he claims, 'we never have any way of choosing between an infinite number of theories compatible with data' (Swinburne 1996: 30)⁷. Given that there is an infinite number of possible satisfactory explanations in *a posteriori* terms, we need an *a priori* criterion such as simplicity to sort them out. However, formulated this way, the main argument for the importance of simplicity in science may make it impossible to calculate the posterior probability of any of the alternatives using Bayes's theorem. The reason for this is that, according to the first axiom of the probability calculus, the sum of the probabilities of the whole set of alternative hypotheses must not exceed 1. Yet, since they are infinite in number, however minimal the value ascribed to each non-contradictory rival hypotheses, the total sum will go beyond the limit established

⁶ Niiniluoto curiously does not consider this alternative in his analysis and jumps from the rejection of the entailment condition to the statement (correct, I believe, but for different reasons) that '[...] simple theories need not be assumed to be probable *a priori* since they turn out to be probable *a posteriori*' (Niiniluoto 1994:162).

⁷ For an equivalent formulation of this problem, see Swinburne 1997b: 15, 1991:55, and 2001a:85.

by the calculus. As a result, in a uniform distribution, the only value one can ascribe to each prior probability of an infinite set of alternative hypotheses is zero. However, from a prior probability whose value is zero, the posterior probability will always be zero, no matter how much the evidence is explained by the hypothesis, a result that makes Bayesian calculations pointless.

A way out of this setback for Swinburne is for him to claim that the simplicity principle justifies a non-uniform prior distribution of probability (see Swinburne 2001a: 243). In other words, the principle of simplicity would permit attributing higher priors to simple hypotheses and lower ones to complex theories. However, this solution only works if we assign a prior probability of zero to complex hypotheses, since otherwise the problem of a total sum higher than 1 will persist. Yet there is no reason for such an attribution, since simplicity and complexity are a matter of degree, that is, a highly complicated hypothesis h may deserve a very low prior but not zero, given that another even more complicated than h can be logically formulated, and no prior probability can be lower than zero. As a result, even using simplicity as a way of assigning differentiated prior probabilities, any formulation of the curve-fitting problem that includes the scenario of an infinite set of alternative explanations runs the risk of being inconsistent with the probability calculus.

Swinburne gives a reply to this apparently fatal objection, that curiously appears as just an additional note, since, in his words, ‘nothing further in [his] book turns on it’ (Swinburne 2001a: 103n). According to Swinburne, the contradiction above disappears if we adopt a mathematics of infinitesimal numbers, in which an infinite amount of such numbers can be conceived that are greater than zero but less than any finite number. ‘This’, he claims, ‘allows us to attribute the same infinitesimal value to each of an infinite number of prior probabilities, which sum conjointly to 1’

(Swinburne 2001a: 244). In fact, holds Swinburne, the use of non-standard analysis, as this type of mathematics is called, delivers us from the implausible view that each disjunct in an infinite set of rival explanations has the same value as a false or self-contradictory proposition. After all, says he, ‘there is some chance of winning in a fair lottery with an infinite number of tickets!’ (Swinburne 2001a: 244).

However, if it is difficult to see how the principle of simplicity alone would be able to sort out the hypotheses in dispute in a standard analysis, what can we say about a degree of distinction involving infinitesimal figures? Even if we grant to Swinburne the epistemological value he is postulating to simplicity, his principle is very far from having the sort of precision needed to distinguish the prior probabilities of competing hypotheses in such a highly subtle context.

Still, the main problem with Swinburne’s reply to the question we are analysing here is its implausibility. Even if we can mathematically conceive of an infinite set of rival explanations without contradicting the probability calculus, this is too artificial to be able to clarify what happens in scientific reasoning. The attribution of prior probability zero to each disjunct of an infinite set of exclusive hypotheses is due not to the fact that each of them equals a self-contradictory proposition, but to the implausibility of the scenario suggested. It is not that there is no chance of winning in a lottery with an infinite number of tickets, the problem is that the suggestion of such a kind of lottery simply does not make any sense.

Indeed it is regarding the artificiality of Swinburne’s idea of an infinite set of alternative hypotheses that Colin Howson formulates the following criticism:

How does one find an at most countable set which contains all the possible laws governing the data which science will ever deem worth testing, and which “will exclude no possible law *a priori*”? ...[The] answer is that the possible laws science will ever deem worth testing are those which it actually will test, not those which populate some independently-given logical space, the vast majority of which will never even be thought of (Howson 1988: 74).

In other words, Swinburne's main justification for simplicity is based on too artificial a scenario. In postulating a universal and objective constraint for the assignment of prior probabilities, the advocates of simplicity forget that theory choice in science does not start from any set of logically possible explanations, but from the limited universe of hypotheses already being considered as relevant by the scientific community concerned. Consequently, Swinburne's argument for considering simplicity in a Bayesian interpretation of scientific reasoning can be accused of having little relation with actual theory choice in science. In searching for *a priori* criteria to assess alternative prior probabilities, Swinburne is following through the ideal of neutral, unprejudiced consideration of hypotheses, which is typical of the defenders of the logical theory of probability (see Howson 1988: 77). However, the attempt to pose the problems involved in theory choice under a neutral logical space of alternatives reveals itself to be very implausible.

According to Howson, we do not gain anything in imposing *a priori* constraints on the attribution of prior probabilities apart from those required by the axioms of the probability calculus. If we consider Bayes's theorem as a formula for valid inductive inference from pre-test to post-test distributions of partial belief, and if we take prior probabilities as premises of this argument, then the demand of objective assignment of priors is simply pointless. It would be the same as requiring deductive logic to lay down criteria for assessing the truth-value of the premises in a syllogism, for example. So, there is no problem in principle if we start from whatever prior value we like, just as there is no problem if we start from any premise we may want to assume, as long as we comply to the axioms of probability calculus and the consequences of deductive logic, respectively (see Howson 1988: 82). The application of a Bayesian inference enables the production of posterior probabilities

that are person-independent, as long as the subjective prior probabilities are coherently updated through consideration of data in the likelihood calculations. In other words, we do not need to care very much about the starting points of our Bayesian inferences once we agree to change our prior probabilities in the light of evidence.

This alternative approach to the problem of prior probability will be treated in more depth in Chapter 7.2. For the moment I need only emphasise that in order to adopt a Bayesian approach we do not need to postulate the principle of simplicity or any universal and impersonal criterion for the evaluation of explanatory hypotheses as in Swinburne's hard rationalism programme. In not doing so, we avoid all the problems aired regarding Swinburne's favourite epistemological principle, and can still benefit from the rigour and clarity the Bayesian inferential pattern can provide.

With this chapter I conclude my analysis of Swinburne's use of Bayes's theorem and the simplicity principle in the epistemology of theism. In Chapter 1 I presented his project as a version of hard rationalism intended to apply to religious beliefs the same tools employed in the justification of scientific theories. In Chapter 2 I investigated the main criticisms of Swinburne's application of those tools, and pointed to the crucial role his principle of simplicity played in his Bayesian approach. Chapter 3 analysed the foundations of his principle and argued that it not only faces substantial difficulties, but also may turn out to be useless in a Bayesian analysis of a hypothesis, a topic that will be further developed in Chapter 7. All Swinburne's concern with simplicity as a way of attributing universally and impersonally justified prior probability could well be disregarded without damaging to a fruitful application of Bayes's theorem to the epistemology of theism. I will explore this alternative Bayesian approach later in this thesis. Before doing so, however, let us examine

another crucial element of Swinburne's justification of theistic belief, namely religious experience. In the next chapter I will discuss Swinburne's treatment of this fundamental factor in his justification of theism and the relationship between religious experience and his whole project in religious epistemology.

Chapter 4 – Religious Experience and Bayesian Confirmation

In a comprehensive article surveying contemporary analytic religious epistemology, William Hasker describes Swinburne as part of the ‘experientialist movement’, a trend in the philosophy of religion that became very significant in the 1980s and 1990s (see Hasker 1996:144). By ‘experientialism’ is understood the attempt to provide an epistemic basis for religious belief through religious experience, an effort that, according to Hasker, also includes authors like William Alston and Alvin Plantinga¹, and, more recently, we could add Jerome Gellman and Caroline Franks Davis². Religious experience plays a major role in *The Existence of God* but, despite its importance for Swinburne, he gives little further attention to it³.

In this chapter, I will present and comment on the way Swinburne defends the evidential value of religious experience and the manner his argumentation fits into his inductive case for the rationality of the belief in God. In conclusion, I will evaluate the resulting interaction between religious experience and the other arguments discussed in Swinburne’s final balance of the probability of theism. The present discussion of religious experience will basically follow Swinburne’s approach. Criticism of it will be left to the next chapter.

¹ The inclusion of Plantinga in this movement is at least controversial in view of more recent literature. See, for example, Plantinga (2000: 182).

² See particularly Gellman (1997) and Franks Davis (1989).

³ On Bayesian theory of confirmation we have by him *An Introduction to Confirmation Theory* (1973), *Epistemic Justification* (2001) and at least four articles (see Swinburne’s select bibliography in Padgett 1994:354ff.). At least two articles were issued on the evidential role of simplicity in scientific theories apart from the booklet *Simplicity as Evidence of Truth* (1997), which was largely reproduced in (2001). There are additional discussions about those topics in *The Existence of God* (1979 – revised edition: 1991), *Faith and Reason* (1981b), and *Is There a God?* (1996). As to religious experience, in addition to what we find in *The Existence of God* (the main source for his ideas on this subject), there are mentions in *Faith and Reason* and *Is*

1. Religious Experience and its Evidential Value

1.1. The character of religious experience

In order to understand what Swinburne calls ‘religious experience’, let us quote four of his examples. Firstly, the episode in which Saint Paul is hit with a blinding light and talked to Jesus, which changed his life forever (Acts 9.3-9). Secondly, the case of the Portuguese children who claimed to have seen and talked to the Virgin Mary in Fatima. Thirdly, the story of Joseph receiving a message from an Angel in a dream about the Virginal Conception (Matt. 1.18-25). The fourth interesting example of religious experience Swinburne offers is that of someone who watches the beauty of a sunset and sees it as God’s handiwork. All these reports are taken by Swinburne as good examples for his argument from religious experience.

Swinburne calls these events ‘experience’ because they all refer to a mental occurrence (see Swinburne 1991:244). It is a conscious mental going-on in that the subject is aware of what he is enduring and is capable of giving some description of it. In all these cases there is a subject who claims to have felt something that is assumed to have religious relevance. Given the difficulty of defining ‘religion’, Swinburne restricts religious experience to that which is related to God or other supernatural beings, consciously excluding many experiences of the sort that do not refer to external entities (cf. Buddhism) (Swinburne 1991: 246).

Given that he is interested in religious experience in order to develop an argument from it addressed to those who do not share religious belief, Swinburne opts for an internal description of it, one that does not immediately entail the existence of the object of the

there a God?, and only one article (‘The evidential value of religious experience’, Swinburne: 1981a), which is largely a short version of the corresponding chapter in *The Existence of God*.

experience (see Swinburne 1991: 245). Internal descriptions of experiences talk in terms of what the subject appears to be perceiving. This is so because to use an external description of the person's report about seeing God's handiwork in a beautiful sunset would be too straightforward to claim God's existence. External descriptions of religious experiences in an argumentative context would be like begging the question.

However, if there are reasons to present the reports in an internal way, it will also be assumed that those experiences are bases for the subject to believe in the existence of the corresponding realities. Saint Paul took that occurrence on the road to Damascus as a crucial landmark in his whole life, when he not only stopped persecuting Christians, but also became a leading apostle of the nascent faith. This all happened because what seemed to him to be Jesus' figure was enough to create in him the belief that this one was indeed alive, as the Christians had been claiming since soon after his death. Following Roderick Chisholm, Swinburne uses 'epistemic' to describe the use of words such as 'seem', 'look' and 'appear' when they imply that the subject is inclined to form beliefs on the basis of his/her experiences. So, when I say in the epistemic sense that 'it looks as if there is a computer in front of me' I mean that I have this mental occurrence and that this experience is enough to create in me the belief that there is a computer in front of me. As a result, the reports of religious experience stated above should be taken as internal descriptions of apparent experiential contacts with God or with some other supernatural being (see Swinburne 1991: 246). Consequently, 'what makes an experience religious', Swinburne asserts, 'is the way it seems to the subject' (1991: 247).

Thus, religious experience should be taken as a sort of perception, although it does not restrict itself to the five common senses. Experiences such as the one led by Joseph in his dream or those had by mystics like Saint Theresa are not necessarily mediated by the senses. Yet, they can still be called perceptions because they are, like sense perceptions, an apparent

awareness of something apart from ourselves. According to Swinburne, '*S* perceives *x* (believing that he is so doing) if and only if an experience of its seeming (epistemically) to *S* that *x* is present was caused by *x*'s being present' (Swinburne 1991: 247). In this view of perception, the causal theory, our perception of an object is caused by something apart from our mental apparatus in a way that we can only say that we are perceiving an object if this object is the cause of our awareness of it. So, I cannot be said to perceive a computer unless my awareness of the computer is caused by this object's being present. By the same token, Swinburne claims, '*S* has an experience of God if and only if its seeming to him that God is present is in fact caused by God being present' (1991: 247-8).

However, Swinburne admits that religious experiences are normally private whereas most sense perceptions are public (see Swinburne 1991:249). Once people with working sense apparatus are rightly positioned, pay the same degree of attention and use the same relevant concepts, they will all perceive the same physical objects. Still, a perception of God is generally not a public occurrence. It can happen to a subject *S* but not to *T* who is by his side, as in Saint Paul's vision quoted above, which could not be shared by his journey companions. This discrepancy, Swinburne affirms, can be coherently fitted in the religious stance. On the one hand, God only manifests Himself to those He wants to. A religious experience is a sort of grace, not reachable by our own merits but according to God's will (see Swinburne 1991: 249). On the other hand, if God appeared to everyone at all moments, our free will would be severely damaged, given the moral power of that kind of experience. We would have no alternative but to follow God's commandments, which, according to the Judeo-Christian tradition, would be contrary to God's wish that we co-operate with his work freely, not constrained by any external cause (see Swinburne 1991: 244).

Even in the case of sense perception, one and the same visual sensation may cause different perceptions in two different people, just as when looking at an X-ray, the radiologist

sees a lung infection while the layman only notices some dark stains. The radiologist is not having two different perceptions, but perceiving the dark stains as a lung infection. An analogous situation occurs when the religious man sees God's handiwork in a beautiful sunset while the secular believer cannot have the same perception. We may interpret that situation as the latter simply lacking the same conceptual apparatus needed to have the corresponding religious experience, just as the layman fails to see the infection because of a lack of the relevant conceptual skills.

An important feature of Swinburne's argument from religious experience is that in order to establish theism as the best explanation of this phenomenon, he introduces two epistemic principles, the principle of credulity and the principle of testimony, which will be described in what follows.

1.2 The principle of credulity

The principle of credulity asserts that, '[...] (in the absence of special considerations) if it seems (epistemically) to a subject that x is present, then probably x is present; what one seems to perceive is probably so' (Swinburne 1991:254). Clearly, without accepting in principle the information provided by our sensory organs, we would have no basis to hold the knowledge we think we have about the world, for they are the main source of data about the entities and occurrences in the universe. Swinburne justifies the principle of credulity by asserting it as an *a priori* (in the Kantian sense) condition of rationality, since otherwise we would be in a 'sceptical bog' (see Swinburne 1991:254, footnote). Without reliance on the principle we would not be able to make any judgement (positive or negative) about any happening outside ourselves.

In being both a condition of rationality and an inductive principle, the principle of credulity parallels the simplicity principle. Both indicate ways in which propositions are

made probable by other propositions and the justification for accepting both of them is that otherwise we fall into irrationality. The types of irrationality involved, however, are different. In the case of the simplicity principle, denial entails that science becomes arbitrary and not guided by any principle. As to the principle of credulity, the irrationality involved is scepticism. If we do not believe what our senses bring to us, we renounce the most important source of information we can possibly have about the world. Both consequences are undesirable, that is, we neither accept that science is totally arbitrary nor really assume a sceptical attitude regarding perception in our lives. Consistent with his hard rationalism, Swinburne wants to bar both forms of irrationality in principle.

The credulity principle ties in with the causal theory of perception. According to Swinburne, we should describe a subject's perception in an internal way, not entailing the existence of the content of its apparent object. Yet, the principle of credulity grounds the step from the internal mental act to the belief in the external object of that act, if it is a genuine perceptive act. So, according to the causal theory of perception, *S* perceives *x* only when his belief about *x* has its source in sensory contact with an object or event *x* that seems to *S* to exist outside his mind. For Swinburne, then, in principle, appearances are not misleading.

However, the move using the causal theory of perception and the credulity principle to give evidential value to experiences described internally may be annulled by the very objection that the case at issue was not one of a genuine perception, but simply a hallucination or an illusion, for example. In fact, it is in order to prevent this type of objection that the principle of credulity is construed in a defeasible way. The phrase 'in absence of special considerations' is absolutely crucial to its statement. Without this clause, the principle would be open to obvious criticisms, since there are many kinds of situation in which the fact that it seems to *S* that *x* is present does not constitute a good reason for *S* to

believe that x is present. Swinburne offers four cases in which the perception S seems to have of x does not bear evidential value for his belief about x .

Two typical cases for restricting the application of the principle of credulity invoke circumstances in which perceptual claims have proved unreliable in the past. In the first situation, the subject who had the experience or the conditions under which the perception was made were shown to be unreliable (Swinburne 1991: 260). If I am visually impaired at night or if according to my own records I am inclined to have hallucinations and illusions while I am having a certain medicine, I had better not believe *prima facie* what my senses indicate to me in these cases. Through induction I come to know that my visual senses are not reliable in these circumstances. Consequently, the rational way to face the information conveyed by them is to consider them guilty until proved innocent, which is the opposite of what the credulity principle prescribes.

While the first constraint for the credulity principle refers to inductive limits to the subject's conditions, the second one is related to the object claimed to have been perceived. Even if I do not have any special sensory impairment and there is nothing special in the circumstances under which I am perceiving x , but if I usually have trouble in recognising x perceptually, then the most prudent stance to take is to disbelieve what I have apparently seen. So, if I have proven to be unreliable in recognising wines in the past, I should be cautious about my belief that what I am now tasting is a Chianti, not a Merlot.

The two other restrictions to the principle of credulity refer to the causal relationship a perception is supposed to contain. As we saw, for Swinburne, a perception occurs when S 's seeming to have perceived x was caused by x being present. The third restriction casts doubt that the object allegedly perceived was really present. In other words, if my background knowledge makes very improbable that x was present then the principle of credulity has a limited application. The typical case is the claim of having seen something that does not

exist anymore, like dinosaurs or people who have already died. However, although the principle of credulity does not guarantee an initial belief in this kind of content, their initial improbability can be overcome by additional evidence. The apparent perception of an external object when no such object is present is called hallucination, which is different from illusion, that is perceptually mistaking an object to be x , when we are really perceiving y . Hallucination is the case at issue in the third limit to the credulity principle, while the fourth refers to illusion.

The fourth limit to the application of the principle of credulity occurs when there is good reason to show that the object allegedly perceived was not the cause of the experience of its seeming to me that x was there. So if x appears in a guise utterly different from its normal character, then I am right in doubting that it was x that caused my perception. Another related situation is when I am shown the real cause of my mistaken perception. If, for example, I appeared to have seen the head of my department at UnB, who has proved to be a very reserved serious man, and who usually dresses very circumspectly, enter a samba ball in a scandalous costume, I would have reason to believe it was not him whom I had perceived. My background knowledge enables me to take that appearance as misleading in principle and deserving of further proof before the corresponding belief is accepted (and disseminated). If after my inquiry I find out that my head has a twin brother who has opposite habits to his, I will then be justified in considering my purported perception as only an illusion.

May the credulity principle be applied to religious experiences? Is someone who thinks that he has perceived God or some other supernatural being entitled to believe what he appears to have seen is really present? Can he say that his perception of God was caused by God being present? These are crucial questions for the task of giving evidential value to religious experience. Since Swinburne attempts to perform this task using both the principle

of credulity and the principle of testimony, let us discuss the latter before we see how he specifically applies them both to alleged perceptions of God.

1.3 The principle of testimony

The principle of testimony is also suggested by Swinburne as a condition for acquiring beliefs rationally. According to him,

One inductive principle which all men accept is what I may call the testimony principle, that, other things being equal, if someone tells you that p , then probably p . What other people tell us is the main source of our knowledge about the world beyond our immediate experience (Swinburne, 1981b: 40).

The reason for postulating this rule is the idea that testimony is actually the main source for what we take to be our true beliefs. Most of our knowledge of history, geography, and natural sciences or about our own childhood, for example, is in fact based on other people's word. This wide and universal use of others' reports as a means of obtaining knowledge constitute the first element in Swinburne's claim that there is a presumption in favour of testimony, given certain qualifications regarding its sources.

According to Swinburne, 'we could not even understand what people say to us (which we need to do in order to test whether they are telling the truth) unless we had already made an assumption that they normally tell the truth' (Swinburne 1981b: 41). Testimony for him, then, is not only a contingent source of most of our actual true beliefs but also a necessary recourse in our acquisition of knowledge. In order to justify belief in what other people say, however, the principle of testimony must be qualified by some restrictions. This is what Swinburne means with the expression 'other things being equal'. 'But other things may not be equal', he observes: 'You may have other evidence which promotes the contrary belief – you may have seen for yourself or some third person may have told you that not- p . In that case, despite being told that p , you may still come to hold the belief that not- p , or may ascribe equal probabilities to p and to not- p ' (Swinburne 1981b: 40). Moreover, the informer may

have been untrustworthy on other occasions, or he may be in a circumstance that makes his report dubious or even not be considered expert enough to testify on the subject in question (see Swinburne 1981b: 40)⁴.

In fact, Swinburne admits testimonial reports are weaker evidence than direct experience, when he states that

[...] if *S* reports that it seems (epistemically) to *S* that *x* is present, then that is reason for others also to believe that *x* is present, although not as good reason as it is for *S* if in fact he is having the experience which he reports. However, clearly it is quite a good reason (Swinburne 1991: 274).

In other words, although testimony may on its own be sufficient reason for believing a proposition, it is not as strong as having direct access to the event through perception. This proviso might be taken as introducing a certain ambiguity in Swinburne's position regarding testimony. Yet, for my present purposes, it is sufficient to understand his position as postulating that testimonial reports deserve initial credence, unless there are positive reasons to deny them.

Having described the two principles needed for ascribing evidential value to religious experience, let us see how Swinburne applies them to accomplish that aim.

1.4 Justifying religious experience with the credulity and testimony principles

Granted we can use both the principle of credulity and the principle of testimony to provide evidential value to religious experience, Swinburne's argument here at issue becomes very straightforward. Given there are many reports of people who claim to have perceived God, the principle of credulity justifies the perceiver's belief that that experience was caused by God being present and the principle of testimony entitles us to believe those people's

⁴ For further discussion about the nature of testimony as a source of information see Coady 1992, Stevenson 1993, and, certainly, Hume's *Enquiries Concerning Human Understanding*, section X (1882).

word. At the end, we have a very strong piece of evidence in favour of theism. However, in order to be able to advance this argument, Swinburne needs first to address two different sorts of challenge. Firstly, he needs to justify the claim that we can use these principles to ground belief in religious experience reports. Secondly, he needs to show that the limits concerning each principle do not apply in general to statements of alleged perceptions of God. Let us follow his arguments on these matters in turn, of which a deeper critical assessment will be made in Chapter 5.

In general terms, Swinburne believes it is not up to the theist to show that the principle of credulity can be applied to religious experience. Warning against the sceptical cul-de-sac that threatens those who deny the credulity principle, he adds: ‘And if it is all right to use it for other experiences, they need a good argument to show that it is not all right to use it for religious experiences’ (Swinburne 1991: 254 footnote). In other words, unless one demonstrates that the analogy between sense perception and religious experience is not strong enough to warrant the application of the credulity principle to the latter, he feels justified in doing so. The burden is upon the critics of religious experience to show that the analogy with sense perception is weak.

Swinburne endeavours to dismantle two arguments produced to rule out the application of the principle of credulity to religious experience. The first objection claims that that principle requires inductive justification that is not available in the religious case. So, for example, my reliance on my visual perception of parrots is justified by the fact that in the past my seeming to have seen a parrot proved to be right. For Swinburne, however, this argument has at least two flaws. Firstly, it is not true that we need to recall our past experiences to justify the truthfulness of a current experience. Not only do we not act that way, but even were we to do so, we would be trapped in a potentially infinite regress in justification, for what would be the grounds for such a recollection? Secondly, a person who

has never seen a parrot before is perfectly able to recognise one on the basis of a description of that particular kind of bird. Once the description is given in terms of properties that are familiar to us, there is no reason to consider unjustified a perceptual belief of something we do not have past experiences of. In that case, Swinburne argues, there is no reason to rule out the perception of God, since '[God] is defined as a "person" without a "body" who is unlimited in his "power", "knowledge", and "freedom", and in terms of other similar properties, of all of which we have had mundane experience' (Swinburne 1991: 256-7).

The second general argument used to rule out the application of the credulity principle to religious perception asserts that the principle holds only in cases that involve sensible characteristics or relations such as colour, temperature, similitude, and spatial location, for example. These would be basic perceptions, whereas those alluded to in religious experience would be mere interpretations or inferences from basic beliefs, which require further justification (see Swinburne 1991: 258). Only basic perceptions would be worthy of direct application of the credulity principle, since they would be the only ones we could take to be caused by the presence of the corresponding object instead of our own ideas. The problem with this argument, Swinburne claims, is that any distinction between sensible characteristics and interpretative concepts will turn out to be arbitrary. Moreover, we are generally justified in believing in objects not grasped through sensible characteristics. Indeed, the fact that we cannot describe an object x in more 'primitive' terms does not mean we cannot recognise it. So, if we cannot reduce a perception of God to sensible qualities that does not mean we cannot legitimately recognise God through perception. 'From all this', Swinburne holds, 'it follows that if it seems to me that I have a glimpse of Heaven, or a vision of God, that is grounds for me and others to suppose that I do. And, more generally, the occurrence of religious experience is *prima facie* reason for all to believe in that of which the reported experience was purportedly an experience' (Swinburne 1991: 260).

Granting to Swinburne his case against these two arguments, and bearing in mind that some other objections against the evidential value of religious experience will be analysed in the next chapter, let us see now how this phenomenon can be assessed in view of the principles of credulity and testimony.

The first limit regarding the credulity principle does not affect most religious experiences, Swinburne says, since they '[...] are had by men who normally make reliable perceptual claims, and have not recently taken drugs' (1991: 265). Let us grant that, provided there is no general charge against the reliability of the perceptual apparatus of people who have had religious experiences or any indiscriminate objection against the circumstances according to which those experiences were had, this first limit does not apply. So, since there is no wholesale rejection of the perceptual ability of people who have had religious experiences, and unless there is a case by case analysis available showing otherwise, we may consider this first objection as inapplicable.

In his discussion of the second challenge, Swinburne adopts the same general idea as in the first one: the burden of proof is on the sceptic about religious experience. In other words, the only general way to show that perceptions of God are unreliable is by proving that God does not exist (see Swinburne 1991: 265). Yet, there are also two alternative ways of presenting the second challenge. The first of them is the assertion that, given religious pluralism, alleged religious perceivers in different traditions claim to have experienced supernatural beings whose co-existence is not possible. Consequently, these multiple experiences of God in irreconcilable traditions would cancel each other out, which would already be a general reason for not accepting their evidential value. Swinburne replies to the problem posed by religious pluralism by distinguishing between the different descriptions of God and the common reference these multiple accounts may be said to have. If so, the conflict would be merely superficial, since it would be only that God is perceived differently

in different cultures, according to the vocabulary familiar to each of them. As a result, this does not mean that religious perceptions are contradictory, since they can still have the same referent. In such cases where the claim of a given experience is specifically incompatible with the creed of other religions (like having perceived God through having seen the resurrected Christ, for example), it is enough, in order to preserve the evidential value of religious experience, that we rephrase the original claim in a less committed way. The potential conflicts posed by religious pluralism, Swinburne holds, are '[...] a source of challenge to a particular detailed claim, not a source of scepticism about all the claims of religious experience' (Swinburne 1991: 266).

The second way of imposing the second limit to the application of the credulity principle to religious experience questions the very possibility of recognising God. In sense perception, we normally recognise objects that we have previously observed, frequently with the help of someone who taught us how to recognise that object through pointing it out. So, a child in the Amazon can learn how to identify a parrot by being visually presented to this bird by his parents, for example. Since God is incorporeal, religious experiences are normally private, and their occurrence is out of our control, we have no way to acquire the means of recognising God properly. Consequently, all claims of having identified God in a perception should be rejected.

According to Swinburne, however, this argument does not have compelling force, because we can come to recognise an object that we have never seen before just through a description of it, without involving any particular previous sensory contact (see Swinburne 1991: 268). So, a British child who had never been to a rainforest may be able to recognise a parrot in her first visit to the zoo just by having been given a verbal description of what this bird is like. As to people, we may be able to identify them at the first visual contact just because they match a behaviour description we have had of them. If so, there is no problem

in principle in recognising God as what one has perceived by religious experience. Nevertheless, Swinburne concludes, '[...] *some* mild suspicion is cast on a subject's claim to have recognized an agent with these qualities [such as great power, knowledge or freedom] by the qualitative remoteness of his previous experiences from what he claims to have detected – but for the reasons which I have given, only *some* mild suspicion' (Swinburne 1991: 269).

One challenges religious experience by means of the third limit of the credulity principle by doubting that God was present as the cause of perception. This charge would only do, Swinburne argues, if there were a proof that God does not exist, since if He does, He is everywhere and can be perceived by those to whom He decides to reveal Himself (see Swinburne 1991: 269). Given that no such demonstrations have been provided yet, religious experience can also be said to have passed this test.

The fourth limit to the principle of credulity implies that the alleged perceptions of God were caused by something other than God. So, if a more plausible cause of one's perception of God is advanced than that God was really present to me, then this is good reason not to believe that it was a case of perception of God. According to Swinburne, this objection does not do because if there is a God He is omnipresent and the sustainer of all causal processes. 'Hence', concludes Swinburne, 'any causal processes at all which bring about my experience will have God among their causes; and any experience of him will be of him as present at a place where he is. And so if there is a God, any experience which seems to be of God, will be genuine – will be of God' (Swinburne 1991: 270). Again, the only way to make this challenge to work against religious experience would be to have a proof that God does not exist.

All these arguments will be analysed in greater depth in the next chapter in which I will attempt to show that they form a stronger cumulative case against religious perception as

a source of objective evidence than Swinburne admits. For the moment, however, let us grant him the thesis that we can justify our belief in God from religious experiences using the principle of credulity.

Regarding the principle of testimony, as seen above, the main constraints in believing what other people say relate to the reliability of the witness. According to Swinburne, however, it is not normally true that people who report religious experiences are habitual liars, or have a tendency to exaggerate or to misremember what they perceived (see Swinburne 1991: 272). In fact, there is a way to test the witness's reliability here, for it is sensible to expect a change in life-style from someone who endured a religious experience. If you really have had a perception of God, then your faith will become much stronger and the time and importance you dedicate to religion will increase considerably. Since there is no reason in principle to suspect the trustworthiness of people who claim to have perceived God, and since in the most famous cases above the mentioned change in behaviour was observed, Swinburne claims we can also take religious experience to have passed the test of its applicability regarding the principle of testimony.

So, granting Swinburne for the moment that religious experience not only can be justified by the principles of testimony and credulity but also that it actually passes all the tests they impose for the acceptance of a perceptual claim, let us see now how this analysis fits in the Bayesian framework generally adopted in his justification of theism.

2. Religious Experience as an Argument for the Best Explanation

A preliminary point that is worth exploring before we discuss how Swinburne fits religious experience into a Bayesian argument for the theistic hypothesis is the way he understands the interaction between the reports of alleged perceptions of God and the other pieces of evidence exposed in *The Existence of God*. The final balance of probability does

not arrive at a conclusive result before the evidence of religious experience is considered separately, for, in his words:

[...] (I have ignored this evidence so far, because I had a somewhat different approach to it from the approach to all other evidence, which involved the use of Bayes's theorem) (Swinburne 1991: 291).

However, despite being qualitatively and formally different from the other arguments, the evidence provided by religious experience is not functionally different from the other C-inductive arguments he developed in *The Existence of God*. As with the other pieces of evidence, religious experience is said to confirm theism because this hypothesis is the best explanation for that phenomenon.

Given that this point generates some difficulties with interpretation, it may be worth having a closer examination of the reasons why the argument from religious experience does not follow the inferential pattern provided by Bayes's theorem, in contrast to the other arguments produced by Swinburne. In principle, there is no impediment to using Bayes's theorem to evaluate the extent to which the evidence provided by religious experience confirms the hypothesis that there is a God. In fact, Swinburne employs the formalism at the end of Chapter 13 to show that the probability of the occurrence of a religious experience e is higher given the hypothesis of theism h than given either only background knowledge k – the occurrence of e anyway, or in formal terms $P(e/k)$ – or the denial that there is a God [$P(e/\sim h.k)$] (see Swinburne 1991: 275). Nevertheless, apart from this and another brief reference to the formal Bayesian reasoning (see 1991:260), there is nothing in his discussion of religious experience that involves Bayes's theorem. He justifies this exception to his approach by arguing that, since the principle of credulity has a fundamental and simple character, and is sufficient to ground the evidential value of religious experience, he does not need to interpret these issues via the apparatus of Bayes's theorem (see Swinburne 1991: 275).

Still, it is hard to understand why the principle of credulity makes Bayes's theorem superfluous. The principle and the theorem in fact play considerably different roles. The former serves to ground the explanatory power of theism over religious experience and the latter to formalise the probabilistic reasoning involved in the assessment of the theistic hypothesis. Bayes's theorem is invoked to record in a rigorous way the inductive relations between the hypothesis of theism and various pieces of evidence, putting them in a clear and manageable probabilistic form. Although the principles of credulity and testimony are *a priori* like Bayes's theorem, they are used not to convey the argument or to highlight its main logical relations, but to claim that theism is the best explanation for that phenomenon. At this point, Swinburne could be accused of overlooking the purely formal role of Bayes's theorem in his own approach, a criticism I made of Prevost (1990) in Chapter 2.1.2 (pp. 46f).

In fact, it is a widely held opinion among Swinburne's commentators⁵ that he does not need the Bayesian approach in his discussion of religious experience because he is here involved in a very different way of arguing in favour of the rationality of the belief in God. According to this interpretation, Swinburne opts to treat religious experience as an exception to his general method of argumentation.

However, the use he makes of religious experience is better understood in a different way. In Swinburne's approach, the religious perceptual reports need to be backed up by epistemological principles so that he can show that theism is the best explanation for them. By means of the credulity and testimony principles he intends to provide these grounds. If successful, he could claim that there is a phenomenon that no rational person can deny, which is much better explained if there is a God than if there is not (see Swinburne 1991:275). In order to account for this attitude of Swinburne to religious experience, the exception

⁵ See, for example, Abraham (1985:120), Prevost (1990:20), Franks (1985:25), Clark (1984:191), and Alston (1991:195).

interpretation is therefore inadequate. The discontinuity between the methodology employed for this phenomenon and the other ones analysed by him is not irreconcilable. In other words, religious experience can still be interpreted as part of an argument for the best explanation, like all the others analysed in chapters 7 to 12 of *The Existence of God*. Swinburne follows a different method of analysis in Chapter 13 because he needs the credulity and testimony principles to show that theism has a higher explanatory power in relation to this phenomenon than naturalism. Yet, as a whole, Swinburne still provides an argument for the best explanation that can be formalised in Bayes's theorem and functions in the same way as the other arguments.

What is special about the argument from religious experience is not so much its method, but its place in Swinburne's cumulative case for theism. According to Swinburne, it is only with the argument from religious experience that the feeble C-inductive argument provided by the other pieces of evidence can be turned into a strong P-inductive argument in favour of the theistic hypothesis. In other words, it is only the argument from religious experience that can make theism more probable than not, give it a probability higher than 50%, and, consequently, make it demanding of acceptance by any rational being (see Swinburne 1991: 291).

This is an awesome conclusion and implies a very dignified place for the argument from religious experience. Given the methodological character of the present thesis, I do not intend to assess the content of Swinburne's arguments, but merely the extent to which the approach he employs is appropriate for the discussion he engages in. In the next section, I will not analyse whether Swinburne is correct in his strong conclusion in favour of theism. Rather, following the methodological approach of this thesis, I will assess the weight of the argument from religious experience as against the other ones in the Bayesian structure of his

argumentation. As to the idea that we can make a universally acceptable argument from religious experience, this will be discussed in Chapter 5.

3. Religious Experience and The Balance of Probability

The surprising conclusion Swinburne gives to *The Existence of God* proved to be controversial not only in view of its content, but also as regards the calculations that were carried out. Swinburne describes his cumulative case in favour of theism in the following way. The starting point is to ascribe to the hypothesis of theism a prior probability that can be universally justifiable. For this purpose he resorts to the principle of simplicity, since he wants to keep in the background knowledge k only tautologies and irrelevant non-empirical information, since the first piece of evidence (the existence of the universe) encompasses all contingent phenomena there are. He then postulates in Chapter 5 that theism should be considered a simple hypothesis, at least simpler than its rivals (see Swinburne 1991: 284), which means $P(h/k)$, h being the hypothesis that there is a God, may be low, but is higher than its alternatives.

As well as considering the existence of the universe, Swinburne deals with six other pieces of evidence e and claims that theism explains them better than ontological naturalism. However, he acknowledges some qualifications to his reasoning. The argument of morality and the problem of evil do not permit the intended incremental confirmation because while the former is too weak, the latter is neutral regarding theism, since it neither confirms nor disconfirms it, i.e. $P(e/h.k)=P(e/k)$ (see Swinburne 1991: 277). In addition, the argument from history and miracles is not sufficiently detailed, permitting only a conditional conclusion i.e. if those happenings really occurred they would be positive evidence to theism. Moreover, the results concerning the argument from consciousness, providence and the problem of evil only apply if human beings have free will, a thesis that is far from

uncontroversial. Even with those gaps, however, Swinburne believes it is possible to reach a clear conclusion, which amounts to determining whether we have a good P-inductive argument for the existence of God – that is, whether $P(h/e.k) > 1/2$ – out of those C-inductive arguments.

The way Swinburne phrases the question he is attempting to answer in his general conclusion may prove misleading. In ‘Where all the relevant factual evidence is included in e , and k is mere tautological evidence, what is the value of $P(h/e.k)$?’ (Swinburne 1991: 278), he gives the impression that k in the overall calculation of the probability of theism is constituted of non-empirical evidence. However, just one page before, he asserts: ‘For each of these phenomena e $P(e/h.k) > P(e/k)$, where h is the hypothesis of theism, k are the phenomena previously taken into account (i.e. tautological evidence where e is the existence of the universe; the existence of the universe where e is its conformity to order, and so on)’ (Swinburne 1991: 277). In other words, he (correctly) admits that k is formed exclusively by non-contingent evidence only with regard to the cosmological argument. For the subsequent phenomena, the evidence considered previously must now be accounted as part of the background knowledge, that is, the existence of the universe in the teleological argument, the existence of the universe and of order in this universe in the argument of consciousness, and so forth. Indeed, Swinburne acts this way throughout the whole book (see Swinburne 1991: 144, 173, 181, and 227), but, surprisingly, he forgets this in his concluding balance of the probability of the theistic hypothesis. However, that procedure is exactly what makes the consideration of multiple independent evidence increasingly confirm a given hypothesis. In other words, it is by taking each prior piece of evidence as part of the background knowledge of the new argument that we can have a cumulative case in Bayesian terms. Technically speaking, this idea is called the conditionalisation rule, according to which the prior probability at any one point is a function of its posterior probability in the preceding link in

the chain. Applying this notion, we have the following means of calculating the probability of a hypothesis in the light of many cumulative pieces of evidence:

- for evidence e_1 : $P(h/e_1.k) = \frac{P(e_1/h.k) \times P(h/k)}{P(e_1/k)}$
- for evidence e_2 : $P(h/e_2.e_1.k) = \frac{P(e_2/h.k.e_1) \times P(h/e_1.k)}{P(e_2/k.e_1)}$
- for evidence e_3 : $P(h/e_3.e_2.e_1.k) = \frac{P(e_3/h.k.e_1.e_2) \times P(h/e_2.e_1.k)}{P(e_3/k.e_1.e_2)}$
- for e_7 :

$$P(h/e_7.e_6.e_5.e_4.e_3.e_2.e_1.k) = \frac{P(e_7/h.k.e_1.e_2.e_3.e_4.e_5.e_6) \times P(h/e_6.e_5.e_4.e_3.e_2.e_1.k)}{P(e_7/k.e_1.e_2.e_3.e_4.e_5.e_6)}$$

According to Swinburne, an inductive cumulative case for theism may lead to a very strong argument in its favour. Separately they may be weak, but when taken jointly, the different pieces of evidence can make up a considerably strong argument. The following metaphor used by Swinburne is very eloquent in this sense: ‘[...] if you jam ten leaky buckets together in such a way that holes in the bottom of each bucket are squashed close to solid parts of the bottoms of neighbouring buckets, you will get a container that holds water’ (Swinburne 1991: 14 footnote). So, the conjunction of many different pieces of evidence that are better explained by theism than by any alternative hypothesis will lead overall to a powerful argument in its favour.

Following a view that I will criticise later on, Swinburne’s calculations in the final balance of the probability of theism aim to apply Bayes’s theorem without attributing any numbers to the probabilities involved. According to Swinburne, the components of Bayes’s formula should be interpreted this way: ‘ $P(e/h.k)$ is a matter of how likely it is if h is true (and k holds) that e will occur. $P(e/k)$ is a matter of how likely e is to occur at all, whether or not h is true. $P(h/k)$ is the prior probability of h , how likely h is to be true *a priori* – that is whether

or not e holds' (Swinburne 1991: 282). Recall that for him, the prior probability of the hypothesis of theism is higher than of its rivals because, in Swinburne's words, '[...] it seems impossible to conceive of anything simpler (and therefore *a priori* more probable) than the existence of God' (1991: 284). As for $P(e/h.k)$, i.e. the probability of the existence of a universe, of order in this universe, of conscious beings, of an environment that permits life and learning, and of extraordinary facts in history, he believes they become highly probable assuming the existence of the God of traditional theism. However, $P(e/h.k)$ is low, because God could have created many types of universe apart from the one that actually exists (see Swinburne 1991: 285). There is reason to believe God would have grounds for creating this actual universe, but since His existence is compatible with too many possibilities, the theistic hypothesis does not make e very probable either.

On the other hand, if $P(e/h.k)$ should be considered low, the prior probability of those pieces of evidence $P(e/k)$ is to be taken as even lower. In order to justify this assertion, Swinburne resorts to a theorem of the probability calculus that states $P(A/C)=P(A.B/C) + P(A.\neg B/C)$, which gives us $P(e/k)=P(e.h/k)+P(e.\neg h/k)$. In other words, the prior probability of the pieces of evidence e taken into account is the sum of the probability of e and the hypothesis of theism h on one hand and e and the negation of h on the other hand. According to the third axiom of probability calculus $P(A.B/C)=P(A/B.C)\times P(B/C)$, which means in our case that $P(e.h/k)=P(e/h.k)\times P(h/k)$. Substituting ' $P(e.h/k)$ ' by ' $P(e/h.k)\times P(h/k)$ ' in $P(e/k)=P(e.h/k)+P(e.\neg h/k)$, we have: $P(e/k)=[P(e/h.k)\times P(h/k)] + P(e.\neg h/k)$. Substituting in Bayes's theorem, the result is:

$$P(h/e.k) = \frac{P(e/h.k) \times P(h/k)}{P(e/k)}$$

from which:

$$P(h/e.k) = \frac{P(e/h.k) \times P(h/k)}{[P(e/h.k) \times P(h/k)] + P(e.\neg h/k)}$$

Since we have $P(e/h.k) \times P(h/k)$ both in the numerator and in the denominator, we can write:

$$P(h/e.k) = \frac{X}{X + P(e.\neg h/k)}$$

Consequently, the crucial factor in the calculation of the posterior probability of the hypothesis of theism is the extent to which we have evidence e and theism is false, that is, $P(e.\neg h/k)$. Swinburne claims the only serious alternative to theism is ontological naturalism (an assumption that proved to be problematic). Yet, the pieces of evidence he takes into account are either too big or too odd for science to explain (see Swinburne 1991: 71). As a result, he concludes: ‘the only plausible alternative to theism is the supposition that the world with all the characteristics which I have described just is, has no explanation. That however is not a very probable alternative. We expect all things to have explanations’ (Swinburne 1991: 287).

According to Swinburne, given that $\neg h$ leaves e unexplained, the result is that $P(e.\neg h/k)$ is very low, given the high complexity and order of the universe. $P(e.\neg h/k)$ would be even lower than the prior probability of theism, since, in his words, ‘[...] it is far more likely to be something with the simplicity of God than something like the universe with all its characteristics crying out for explanation without there being God to explain it’ (Swinburne 1991: 288-9). However, if $P(e.\neg h/k)$ is very low, $P(e/h.k) \times P(h/k)$ is also very low, given it is the product of two low probabilities. In this case, he says, $[P(e/h.k) \times P(h/k)]$ and $P(e.\neg h/k)$, can be said to have approximately the same value (see Swinburne 1991: 289). As we have

$$P(h/e.k) = \frac{X}{X + P(e.\neg h/k)}$$

And once $P(e.\neg h/k) = X$ because $[P(e/h.k) \times P(h/k)]$ and $P(e.\neg h/k)$ have approximately the same value we then have the conclusion that $P(h/e.k)$ will have a probability equal to or

less than $\frac{1}{2}$, which falls short of a P-inductive argument for the hypothesis of theism, since given all the pieces of evidence discussed (except the argument from religious experience), the posterior probability of theism is not more than 50% (see Swinburne 1991: 289).

Everything changes, however, when he puts down his trump card: the argument from religious experience. From the arguments above, Swinburne intends to have shown that, in the light of all other pieces of evidence analysed, theism has a probability equal to or less than 50%. As a result, as described in section 1 of this chapter, given the principles of credulity and testimony, we may consider religious experience as a fact much more probable if there is a God than if God does not exist. Consequently, he concludes in the very last lines of *The Existence of God*:

On our total evidence theism is more probable than not. An argument from all the evidence considered in this book to the existence of God is a good P-inductive argument. The experience of so many men in their moments of religious vision corroborates what nature and history shows to be quite likely – that there is a God who made and sustains man and the universe (Swinburne 1991: 291).

So, it is only by means of the argument from religious experience that theism becomes more probable than not, since the cumulative confirmation provided by the other pieces of evidence was not able to accomplish this task. As I said at the end of section 2, this makes the argument from religious experience of central importance.

The complicated reasoning above (see Swinburne 1991: 281-289, particularly pages 286 and 289) can be clarified if we put it in formal terms:

$$(1) \ P(h / e.k) = \frac{P(e / h.k) \times P(h / k)}{P(e / k)} \qquad \text{Bayes's theorem}$$

$$(2) \ P(e / k) = P(e.h / k) + P(e.\neg h / k) \qquad \text{Theorem}$$

(3) $P(e.h / k) = P(e / h.k) \times P(h / k)$	Third axiom
(4) $P(e / k) = [P(e / h.k) \times P(h / k)] + P(e.\neg h / k)$	2, 3 Substitution of $P(e.h/k)$
(5) $P(h / e.k) = \frac{P(e / h.k) \times P(h / k)}{[P(e / h.k) \times P(h / k)] + P(e.\neg h / k)}$	1, 4 Substitution of $P(e/k)$
(6) $P(h / e.k) = \frac{X}{X + P(e.\neg h / k)}$	5 Equivalence
(7) $P(e.\neg h / k) = P(e / h.k) \times P(h / k) = X$	Estimate (Swinburne 1991: 289)
(8) $P(h / e.k) = \frac{X}{X + X}$	6, 7 Equivalence
(9) $P(h / e.k) = \frac{1}{2}$	8 Division by X

In Swinburne's calculations, then, the posterior probability of theism given all pieces of evidence (except religious experience) and background knowledge is at most 0.5^6 . The evidence of religious experience tips the balance in favour of theism because, given the principles of credulity and simplicity, the belief that there is a God is by far the best explanation for that phenomenon.

However, one step in Swinburne's argument is difficult to follow. Step (7) above is highly questionable. It is not because the probability of the existence of the phenomena e and the negation of theism ($P(e.\neg h/k)$) is very low that it has the approximately the same value as

the product of $P(e/h.k)$ and $P(h/k)$, which individually have a higher value. A probability value can be ‘very low’ in infinite different ways, and there is scarce reason to think the ‘very low’ value of the product of $P(e/h.k)$ and $P(h/k)$ and the ‘very low’ of $P(e.\neg h/k)$ have the same value or, in any case, that the posterior probability of theism is not higher than 0.5. As a result, the reasoning that permitted him to conclude that the posterior probability of theism (before considering the evidence of religious experience) is not higher than $\frac{1}{2}$ is in fact mistaken, because it is based on a deeply implausible estimate. In other words, religious experience could not tip the balance in favour of theism because Swinburne’s reasoning was not able to show that the balance was not already in its favour.

In addition, Swinburne argues that the probability of the hypothesis of theism is not very high in view of the pieces of evidence he analyses with the exclusion of religious experience because God’s existence is compatible with too much (see Swinburne 1991: 285). Now, it is hard to understand Swinburne’s reasoning here. In order to establish the conclusion that $P(e/h.k)$ is high it does not matter whether there are other possible phenomena e that could be understood by means of the hypothesis h . The fact that God could also have created worlds different from the actual does not interfere with the explanatory power of theism over the many phenomena of this existent world. The fact that theism is compatible with too many alternative worlds is not a problem for its explanatory power over the actual world, but an indication that its scope is too large. As we saw in Chapter 1, according to Swinburne, scope is a factor that interferes in the prior probability of a hypothesis, rather than in its explanatory power. If scope determines the posterior probability of theism in a way that makes $P(h/e.k) \leq 0.5$ before considering religious experience, then Swinburne must hold that it is scope and not simplicity which is the most important criterion for the prior probability of

⁶ Swinburne in fact claims that $P(h/e.k) \leq 0.5$, but to simplify the formal account I put it as an equation. This point will make no difference to the critical remarks that follow.

theism. In other words, in order to appeal to the scope of the theistic hypothesis to grant a special place for religious experience in his final balance of the probability of theism, Swinburne would need to revisit his dismissal of scope in his earlier treatment of prior probability (see Swinburne 1991: 106).

Two recent articles also dispute the way Swinburne carried out the calculations of his final balance of probability. In a paper intended to follow through Swinburne's Bayesian method, Charles Gutenson attempts to show that Swinburne's conclusion is far too weak. He starts from the tautological expression according to which $P(h/k) + P(\neg h/k) = 1$, which we have already seen above. Since the prior probability of theism and the prior probability of hypotheses that are not the theistic one are complements, they must add up to 1. Gutenson calls $P(\neg h/k)$ 'the rivals of theism', and quoting Swinburne when he said that "[t]he intrinsic probability of theism is, *relative to other hypotheses* about what there is, very high" (Swinburne 1991: 106), Gutenson concludes that $P(h/k) > P(\neg h/k)$, a move that is crucial to his whole argument. Now, given that these probabilities add up to 1, and admitting that $P(h/k)$ is higher than its complement, $P(h/k)$ will certainly be higher than $\frac{1}{2}$ (see Gutenson 1997: 245).

The next step is just a quotation of Swinburne's own view that for each phenomena he discussed in his cumulative case, $P(e/h.k) > P(e/k)$, that is, each piece of evidence is more probable given that there is a God than when considered in isolation (Swinburne 1991: 277). From that, we have that $P(e/h.k)/P(e/k) > 1$, by a pure mathematical step. Now, given Bayes's theorem:

$$P(h/e.k) = \frac{P(e/h.k) \times P(h/k)}{P(e/k)}$$

And given that $\frac{P(e/h.k)}{P(e/k)} > 1$, and that $P(h/k) > \frac{1}{2}$, we have: $P(h/e.k) = (>1) \times (>\frac{1}{2})$,

which amounts to say that $P(h/e.k)$ is surely higher than 50%. ‘In other words’, concludes Gutenson, ‘every individual argument is itself a good P-inductive argument. Therefore, it seems that Swinburne is entitled to a stronger conclusion than he claims’ (Gutenson 1997: 245).

However, Gutenson’s argument makes a mistake that even he takes into account. In his own words, ‘[...] one might argue that I have unfairly collapsed a number of theories into what I called “the rivals to theism”’ (Gutenson 1997: 245). He justifies this move on the grounds that, according to Swinburne’s own assumptions, the prior probability of theism should not be taken as higher than 0.5 only if: a) there were more than one alternative to it, and b) if the prior of theism were not considered higher than of its rivals.

In fact, Swinburne’s own ambiguity is to be blamed if we regard Gutenson’s calculations as mistaken. As we saw, Swinburne considers $P(h/k)$ higher than its rivals, but he does not think theism has only one alternative. He asserts that ‘The only plausible alternative to theism is the supposition that the world with all the characteristics which I have described just is, has no explanation’ (Swinburne 1991: 287, emphasis mine). In other words, apart from the brute fact thesis, there are other alternatives that he dismisses on the grounds of their complexity, like dualism, polytheism or gods with finite powers (see Swinburne 1991: 104 and 287). Given that these hypotheses are potentially infinite (we could think of one finite god, two finite gods, and so forth)⁷, even if their prior probability is very, very low, we cannot just turn our backs on them. As a whole, the conjunction of these very improbable

hypotheses may add up to much more than 0.5, if we include in the sum the brute fact hypothesis. That is why Swinburne affirms that ‘[...] $P(h/k)$ is fairly low, although very high relative to that of other hypotheses about what exists; $P(\sim h/k)$ will be fairly high, not too far below 1’ (Swinburne 1991: 286, footnote 2). So, theism is more probable than any alternative taken individually, but much less probable than the sum of all possible explanations that exclude theism.

As a result, there are reasons to hold that Gutenson’s calculations do not match Swinburne’s ideas, despite all the ambiguity of the latter, and that, consequently, his claim that Swinburne should coherently conclude that each C-inductive argument is in fact a P-inductive one, does not follow. Nevertheless, Gutenson may really be said to have a point when he maintains that Swinburne’s conclusion is too weak. This is the same result the Austrian philosopher Winfried Löffler arrives at in his reconstruction of Swinburne’s final balance of the probabilities. In contrast with Gutenson, however, Löffler opts for following Swinburne’s account of his concluding balance more strictly. Still, unlike Swinburne, who restricts his discussion to a comparative usage of probability (see Swinburne 1991: 17), Löffler ascribes figures to the different items of his Bayesian calculation. In doing so, Löffler conforms to David Bartholomew’s advice, according to which the best way to convey uncertainties is with numbers, since numerical expressions are much more precise and able to show us the consequences of the assumptions we made in our probabilistic arguments, even if we run the risk of unfair interpretations (see Bartholomew 1996: 36-7).

In his exposition, Löffler also calls attention to the fact that, in being an inductive case, Swinburne’s reasoning must obey the conditionalisation rule mentioned above. We need to take the posterior probability of the calculation concerning evidence e_i as the prior

⁷ The idea that we should start from the consideration of a potentially infinite set of alternative hypothesis was already criticised in Chapter 3 of the present thesis (pp.93ff.).

probability for the argument regarding e_2 , and so forth. Löffler interprets Swinburne's idea that $P(h/k)$ is low, but much higher than $P(e.\neg h/k)$ (see Swinburne 1991: 288) as follows: $P(h/k)=0.00001$ and $P(e.\neg h/k)=0.0000001$. He ascribes to $P(e/h.k)$ the same value as $P(h/k)$ to signify that the former is also low, but not too low (see Swinburne 1991: 285). Accordingly, he constructs the following table with the results of his calculations (see Löffler 1999: 97):

<i>After the...</i>	$P(h/k)$	$P(e_{1-7}/h.k)$	$P(e_{1-7}.\neg h/k)$	$P(h/e_{1-7}.k)$
1 st piece of evidence	0.00001	0.00001	0.0000001	0.000999000999...
2 nd piece of evidence	0.000999000999...	0.00001	0.0000001	0.090826521344...
3 rd piece of evidence	0.090826521344...	0.00001	0.0000001	0.900819745968...
4 th piece of evidence	0.900819745968...	0.00001	0.0000001	0.989020879219...
5 th piece of evidence	0.989020879219...	0.00001	0.0000001	0.989990199196...
6 th piece of evidence	0.989990199196...	0.00001	0.0000001	0.989999901990...
7 th piece of evidence	0.989999901990...	0.00001	0.0000001	0.989999999019...

As a result, the more pieces of evidence e are made more probable given a hypothesis h than given its negation, the more h gets confirmed by e . More importantly, the table above shows us that already after the third piece of evidence the posterior probability of theism goes well above 0.5. So, if this reconstruction of Swinburne's cumulative case is correct, we do not need the argument of religious experience in order to have a P-inductive argument in favour of theism. To show that the posterior probability of theism is more than 50% it would be enough to show that the values suggested above for $P(h/k)$, $P(e/h.k)$ and $P(e.\neg h/k)$ were correct for at least three pieces of evidence, as for the traditional cosmological, teleological and providence arguments, for example.

Löffler raises a possible objection to his reconstruction which, in fact, is also applicable to Swinburne's proposal in general. One might dispute that the pieces of evidence

considered by the cumulative case are really independent i.e. that there is no causal link between them. Technically speaking, this is a crucial element for a probabilistic calculation. If A and B are independent objects, then the probability of their conjunction is given by the product of their respective probability, that is, $P(A.B)=P(A)\times P(B)$. In case there is a causal link between A and B, then they should be expressed in terms of conditional probability, that is, $P(A.B)=P(A)\times P(B/A)$ and $P(B.A)=P(B)\times P(A/B)$. As a result, if the pieces of evidence used by Swinburne are not genuinely independent, they do not have the same cumulative effect, making a much weaker case in favour of theism.

In fact, the degree of dependence may determine a very different result, as the case of multiple testimony can illustrate. In commenting on Hume's discussion of miracles, the American statistician William Kruskal asserts that the probability of a miracle having really happened given many testimony reports will vary across a range whose extremes are determined by independence. If the witnesses are completely independent, then the probability of a miracle having occurred becomes a function of the number of witnesses, increasing to very close to 1. 'At the opposite extreme, if the observers behave in a wholly dependent way and give the *same* answer, the conditional probability is the same as for a single observer' (Kruskal 1988: 932). So, we cannot dismiss this objection very easily, since a strong degree of dependence may turn a multiple cumulative case into a simple argument that depends on one sole piece of evidence.

Löffler replies to this potential objection with two arguments. Firstly, he says, despite our tendency to associate the occurrence of conscious beings with the existence of order in the universe, for example, 'there is no conceptual tie between those features of the world, and one can imagine worlds where some of these features are absent. Hence', Löffler suggests,

‘we can rightly treat our six or seven pieces of evidence as independent pieces’ (Löffler 1999: 98). So, it is perfectly possible that there would be the same natural laws we have in a universe exactly equal to the one we know, but where no conscious beings came to exist. Secondly, and more importantly, he argues that

If there should really exist a conceptual, or at least a probabilistic tie between the various pieces of evidence, then this tie exists no matter how the world came into existence. For example: If it was God who created the ordered universe with conscious beings, then it is also more likely that he created a fine-tuning in the universe as well. Hence a rise of the likelihood of the “later” pieces of evidence does not only influence the denominator of Swinburne’s theorem, it also raises $P(e/h \wedge k)$, and this term appears in the numerator and in the denominator. Hence the increase in $P(e/\neg h \wedge k)$ in the denominator is partly neutralized by the increase of $P(e/h \wedge k)$ in the numerator (Löffler 1999: 98).

In other words, since in our calculation we are considering not only the likelihood of theism, but also of its negation, a potential dependence among the pieces of evidence will not change the final result very much. However, Löffler is careful to assert that the increase in the likelihood of the negation of theism will be ‘partly neutralized’ by an increase in the likelihood of theism. In fact, it is difficult *a priori* to determine the extent of this neutralisation.

Can we really consider the facts Swinburne uses to discuss the probability of theism as an explanatory hypothesis to be independent? I cannot find a clear answer in the relevant parts of his works (see, for example, Swinburne 1991: 14-5, where we should expect a statement about this issue)⁸. As seen above, however, Löffler advances an important argument in favour of Swinburne’s position, namely: we can think of a possible world where some of the phenomena at issue occurred but not all applied (an ordered and providential universe but without conscious beings, for example). So, the existence of the universe, of order, of good conditions for the appearance of life, of conscious beings, the occurrence of

⁸ In view of Kruskal’s observation about the widespread neglect of the question of independence in introductory textbooks on probability, this comes as no surprise (see Kruskal 1988: 937, footnote 20).

extraordinary facts in history and of religious experience can all be coherently conceived as having being caused by God in an unrelated way. Each of them could be thought of as independent evidence of God's action, and, consequently, of his existence.

Yet, one could counter that the occurrence of religious experience obviously depends on the existence of conscious beings, that the existence of conscious beings depends on the existence of a world where they can survive, and the existence of a providential world presupposes that there is a universe that is ordered. So, even if we could think of these facts as being independently caused by God, in fact they seem ontologically connected. In this way, they would afford much less support for the hypothesis of theism than Swinburne intended. We can at least say that this problem of whether the pieces of evidence used by Swinburne are really independent does not seem easy to settle.

As regards the place of religious experience in Swinburne's argument, the discussion above allows me to raise two points. Firstly, if Löffler's calculations are right, then there is no reason to postulate a privileged place for religious experience in Swinburne's cumulative case, since already after the third piece of evidence the posterior probability of theism goes well above 50%. Secondly, if the pieces of evidence that confirm the hypothesis of theism are genuinely independent, allowing for an absolute confirmation of theism at the end, then the order of presenting them should be of no consequence. Instead Swinburne starts with the existence of the universe and progresses until he gets to religious experience, giving the impression that they are in a linear, unidirectional sequence of dependence. As we saw, he advances two reasons for this ordering. (1) If we are to judge the initial prior probability only on the basis of simplicity, then we have to put in e all empirical information, leaving for k only tautologies. In order to do this, we have no choice but to start from the cosmological argument. (2) We need to have independent foundations to ground our belief in God in order to make the argument of religious experience really effective, that is, we need to show that

the hypothesis of theism has a non-negligible probability before we can use the argument from religious experience (see Swinburne 1991:271).

However, if we do not rely on the controversial principle of simplicity for anything as I suggested in Chapter 3, and if we do not count on religious experience as decisive for a P-inductive argument for theism argument, we need not present the whole case for theism in that suspicious order. In this way, we can maintain some hope of defending the independence of the case's pieces of evidence and, consequently, of maintaining the cumulative character of the argument. In other words, if we may only consider religious experience after discussing the other arguments, then the independence of the pieces of evidence is undermined and they stop being cumulative.

If Swinburne wanted to put forward a C-inductive argument from religious experience for theism, then the only formal requirement would be that the prior probability of theism was not zero. As he argues in several places, we could only reject from the outset any claim that an experience of God has some evidential value if we had proof that God does not exist (see Swinburne 1981a: 194 and 1996: 136). His purpose, however, was not to show that religious experience yields a good C-inductive argument, but that it has 'considerable evidential force' (see Swinburne 1991:275), and that 'it ought to be taken as veridical' (see Swinburne 1991:270). In order to have this force, the argument from religious experience would need to be backed up by independent evidence that theism is probable (see Swinburne 1991: 271). In this way, the argument from religious experience would be able to make theism more probable than not. However, as I argued above, if theism has the explanatory power Swinburne postulates, then it becomes more probable than not well before the argument from religious experience is introduced.

In the next chapter, I will attempt to show that, apart from being otiose given Swinburne's cumulative case argument, there is reason to doubt the force of religious experience as a basis for a good objective public inductive argument in favour of theism.

Chapter 5 – Problems with Swinburne's Argument from Religious Experience

In Chapter 4 I described how Swinburne uses religious experience to argue in favour of theism. We saw that his strategy was to employ the principles of credulity and testimony so that he could claim that the hypothesis of theism is by far the best explanation for the phenomenon of religious experience. Applied to religious experiences, the principle of credulity would allow us to say that, unless there are reasons to believe otherwise, if a subject *S* seems to have perceived God, then *S* has perceived God. In other words, other things being equal, the fact that many claim to have perceived God is a powerful piece of evidence in favour of the hypothesis of theism, since this is the best explanation for that phenomenon.

In the present chapter, I will challenge Swinburne's conclusion that religious experience provides an objective, acceptable for all and forceful piece of evidence in favour of theism. In this critical discussion, three main issues will be stressed: 1) the disanalogies between religious experience and sense perception that can damage Swinburne's argument, 2) the challenge posed to his proposal by naturalistic explanations of religious experiences, 3) problems posed by religious pluralism to his argument, especially as regards the identification of God in religious experiences.

1. The Analogy between Religious Experience and Sense Perception

Swinburne's efforts to argue that religious experience has evidential value are centred in the idea that since the way we perceive objects through our normal senses provides grounds for believing that the respective objects exist, perceptions of God should be taken as evidence of His existence. In other words, there is a strong analogy between religious experience and sense perception, one that permits him to say that scepticism regarding the

former is as irrational as to the latter (see Swinburne 1991: 254 footnote). As a result, a crucial point to be addressed in a criticism of his position here at issue is the correlation between religious experience and sense perception.

Michael Martin holds, however, that it is possible to be sceptical of the evidential value of religious experience without having the same attitude towards sense perception. To ground his assertion, Martin points out that when we do not perceive the presence of a sensory object this is *prima facie* reason for us to believe it does not exist, or that it is not in the particular place we surveyed. He calls this the 'negative principle of credulity' or NPC, which reads 'if it seems (epistemically)¹ to a subject *S* that *x* is absent, then probably *x* is absent' (see Martin 1986: 83).

Swinburne does not agree that the perception of God's absence can be grounds for believing that God does not exist, because we cannot control the conditions under which God will manifest Himself (see Swinburne 1991: 249). In addition, Swinburne claims that the fact that one person does not see an object *O* while another one does is not enough to say that *O* is not present and we can still maintain that *O* was there (see Swinburne 1991: 263). In fact, when there is a disagreement about a perceptual belief of this kind, the result can be exactly the opposite of what Swinburne proposes, that is, it may be more sensible to believe that *O* was not present. As McKim correctly observes, the resolution of this kind of disagreement will depend on the context of observation, on the relative expertise of the observers and on some other circumstantial elements (see McKim 2001: 212). In other words, if the person who claims *O* was not present had a better functioning perceptive apparatus or was an expert in that type of object or was better placed for observing *O*, then we had better believe *O* was not present, despite the fact that another person has affirmed he saw the object.

¹ 'Epistemically', as we saw in Chapter 4, means a use of verbs like 'seem', 'look' and 'appear' according to which they describe what the subject is inclined to believe on the basis of his experience (see Swinburne 1991: 245-6).

Martin's point, however, is that if we do not know the conditions under which we could expect to perceive God, then this affects the evidential value of purported experiences of both God's absence and presence (see Martin 1986: 84). So, if we do not know in which circumstances God will manifest himself to someone then how can we ascertain that that experience was really of God? According to Martin, the inductive inference from the appearance to me of a table, to the hypothesis that the table was present given certain conditions *C* only becomes strong if we can assume that if the table were really not present and conditions *C* obtained, then the table would not appear to me. In sum, the inference from the perception of an object *O* to the existence of *O* is only inductively strong if we know the sufficient conditions for the appearance of *O* so that we can determine whether the perception was authentic.

William Rowe has a similar point to Martin's when he says that

Since we don't know what circumstances make for delusory religious experiences and we don't know what the conditions are which, if satisfied, one would have the experience of God if there is a God to be experienced, we can't really go about the process of determining whether there are or are not positive reasons for thinking religious experiences to be probably delusive (Rowe 1982: 90-1).

As a result, Rowe concludes, the application of the principle of credulity is not warranted in the case of religious experiences, and if the argument from religious experience depends on the application of credulity principle, as Swinburne claims, then this argument fails as evidence for the existence of God (see Rowe 1982: 91)².

This important distinction between sense perception and religious experience is spelt out by Richard Gale when he argues that the latter does not fulfil the 'epistemological requirement' that he believes is crucial for the evidential value of any sensory claim. This prerequisite for considering a perceptual statement genuine is basically that in order to have

² Jerome Gellman has interesting replies to both Martin and Rowe (see Gellman 1997: 59-60 and 68-9). However, since Gellman does not ground his case in the idea that scepticism directed to theistic experience is as

an initial plausibility conferred by the principle of credulity, experiences '[...] must be subject to defeaters, tests or checks, failure of which lowers this *prima facie* probability' (Gale 1994c: 59).

According to Gale, there are three tests that are crucial for the evidential value of a sense perception claim that religious experiences cannot meet. The first one is what he calls the 'causal test', which requires that in order to generate rational belief, a perceptual claim must have been caused in the right way to the perceiver. In other words, the perceiver must have been positioned in the correct place and with his perceptual apparatus working properly. We can only claim that there is a table in the room based on our perception if we are correctly positioned for discerning that and if our capacity for observing it is in good order. This test, however, does not apply to religious experiences, because, since God is by definition a non-spatial being and is said to appear to anyone He chooses, it does not matter where the perceiver is or whether his perceptual mechanism is working well, for God can overcome any of a perceiver's limitations (see Gale 1994c: 60).

The second test is the agreement among different observers, by means of which a perceptual claim can be falsified by either a better positioned and trained witness or by a larger number of observers with the same capability. The position and the number of people standing in the same place where a purported religious experience occurred, as we saw above, cannot disconfirm the authenticity of an experiential claim of this kind, because God can choose to appear to only one person in a group of people standing in the same place. As to the level or type of training required for testing a statement like this, Caroline Franks says:

[...] we have little idea of the sort of training which would enable one to have veridical experiences of God or other supernatural forces. The kind of training which might seem appropriate – theological training, engaging in religious rituals, guidance in meditation by

irrational as scepticism directed to sense perception (see Gellman 1997: 49-50), his arguments do not apply to the point I am discussing here.

a spiritual master or guru – does not by any means guarantee that one will have veridical experience of God, if he exists; and theists agree that genuine religious experiences may occur spontaneously to theologically naïve and even irreligious subjects (Franks 1985: 28).

The problem for religious experiences, Gale argues, is that the agreement of other observers regarding the content of a purported theistic perception cannot be used as confirming it either. We cannot rationally admit the very employment of a criterion that is only useful to prove but not to disprove (see Gale 1994c: 60). This asymmetry observed in religious experience but not in sense perception is another important difference between them, Gale claims.

The third type of test that is fundamental for ascribing veridical status to religious experience is what Gale calls 'the prediction test'. According to this criterion, a sense perception claim is considered authentic as long as we can predict who will have the experience and the circumstances that will confirm the content of that mental occurrence. The possibility of reproducing the conditions for a veridical perceptual claim to be true is clearly not available to the case of theistic experience, since this experience, if it occurs, is freely brought about by God, whose will is conceived as totally out of any external control or constraint (see Gale 1994c: 61).

So, if Swinburne's ultimate argument from religious experience for theism is founded on an analogy between religious experience and sense perception, then the arguments above pose considerable obstacles to his proposal. However, all these criticisms have force if we direct them against Swinburne's proposal to take religious experience as an objective argument for theistic belief that will convince anyone regardless of background. In other words, as we saw in Chapter 4, Swinburne's proposal for religious experience was to use it as a confirmatory fact in an inductive argument favouring theism. In so far as we accept, through the principle of credulity, that theism is the best explanation for religious experience, then it becomes a powerful argument for the belief that there is a God. Yet, there is good reason to believe that the analogy between sense perception and religious experience is not

strong enough. As Martin suggests, we can reasonably be sceptical regarding the objective evidential value of religious experience without implying scepticism concerning sense perception (see Martin 1986: 92).

Still, these criticisms do not apply if we adopt a different approach to religious experience that dispenses with any strong analogy with sense perception or that does not aim to make of purported experiences of God the basis for an objective and universally acceptable inductive argument. One point that most critics of Swinburne's use of religious experience do not deny is that we observe a strong subjective conviction formed in those who enjoy a religious experience (see Davies 1993: 136, Gale 1994c: 61, Mackie 1982: 185, for example). This strong subjective conviction is commonly accompanied by a remarkable change in behaviour, which is pointed to by most mystical traditions as the decisive test to distinguish veridical from non-veridical instances of religious experience. Indeed, according to Peter Losin, the existence of this distinction based on this sort of commonly observable change in behaviour provides some reply to the argument by Rowe, Martin and Gale that religious experiences are non-testable in their authenticity³. Yet, it is true that, as Gale observes, the type of holiness according to which we can objectively evaluate the genuineness of a religious experience varies from tradition to tradition (see Gale 1994c: 61). In this case, the correct evaluation of an authentic religious experience will be possible only inside a particular religious tradition. Consequently, a religious experience can still have evidential value in the context of a specific religious circle, although not universally, as Swinburne aims to show.

So, it might be possible to afford religious experience a place in the epistemology of religion different from the universalistic appeal Swinburne aims to give to it. In this case, it

³ James Beilby observes that Rowe's requirement that we specify the conditions under which the experience of an object is delusive makes his argument from pointless evil to atheism inconsistent. In addition, Rowe would

would become a justification for religious beliefs by mystical perception within the range of a certain tradition, and the analogy with sense perception stops being crucial and becomes important only to reply to the accusation of circularity. In fact, what we have here are the main ingredients of the alternative consideration for the role of religious experience in the epistemology of theism which I will consider in the next chapter. Before proceeding to analyse that option, however, let us discuss the other two main objections to Swinburne's argument from religious experience.

2. Naturalistic Explanations of Religious Experiences

By 'naturalistic explanations of religious experience' I mean here the accounts of this phenomenon that dispense with the notion of God to understand purported theistic perceptions. So, naturalistic explanations of religious experiences are accounts of that sort of mental happening which generally appeal to pure psychological, sociological or cultural causes to elucidate reports of theistic experience.

Swinburne refers to this kind of explanation while dealing with the fourth challenge to the application of the credulity principle to religious experience. However, he does not elaborate very much on these alternative explanations, since he claims that since God is omnipresent and the ultimate cause of everything, then if He exists He must be the cause of every religious experience. Consequently, the only way to show that God was not the cause of a religious experience is by producing a proof of His non-existence, which has not been done yet. 'Hence', concludes Swinburne, 'any causal processes at all which bring about my experience will have God among their causes; and any experience of him will be of him as present at a place where he is. And so if there is a God, any experience which seems to be of

have much trouble in justifying the common belief in the existence of other minds, for which we do not have objective and non-circular conditions of testing either (see Beilby 1995).

God, will be genuine – will be of God' (Swinburne 1991: 270). In this way, naturalistic explanations are ruled out from the outset.

The problem with stating that 'if there is a God, any experience which seems to be of God, will be genuine – will be of God' is that it amounts to asserting what Michael Levine calls 'the essential veridicality of any religious experience given the existence of God' (see Levine 1990: 207-8). In other words, it implies that there can be no non-veridical religious experience if there is a God. The first unacceptable consequence of this view is that even if a religious experience were enjoyed under the influence of LSD it must be genuine. By the same token, we should take at its face value the insane serial killer's assertion that his crimes were committed following God's call. Both cases would have to be taken as authentic religious experiences if we were to accept that, granted God's existence, all religious experiences are essentially veridical. Apart from being absurd, these consequences ignore the first limit to the principle of credulity as stated by Swinburne himself (see Swinburne 1991: 265), since, although there are positive reasons to doubt the reliability of the subject or the circumstances under which he had the experience, we would still have to accept the reported experience as genuine.

In addition, according to Levine, if we accept Swinburne's claim, then the principle of credulity becomes redundant for those who believe in God (see Levine 1990: 215). Yet, Swinburne engages in a laborious argument to show that there is good reason to trust our senses *prima facie* and to treat religious experience in the same way. Moreover, even those who undergo a theistic perception, like St. Theresa D'Avila, for example, generally hold that there are non-veridical religious experiences i.e. that some of these occurrences were not caused by God but the devil. These reasons, then, seem sufficient to reject Swinburne's dismissal of naturalistic explanations and to justify a more careful consideration of the threat they pose to his argument from religious experience.

According to Jeff Jordan, there are two conditions for a veridical perception of God: 1) that God was present to the place where He has been allegedly experienced (the presence condition), and 2) that God was the cause of that experience (the causal condition) (see Jordan 1994: 60). A naturalistic explanation would suffice to undermine the evidential value of religious experience by showing that at least one of those conditions did not obtain in the religious case. As to the presence condition, one could attack it by arguing that we do not need to show that God does not exist or is not omnipresent to contend that He was not present to the purported experiencer. It would be enough to say that, although God is present everywhere if He exists, His presence is epistemically inaccessible to us, given His infinitude and our limited apparatus.

We could also impugn the causal condition of religious experiences by showing that either God had no causal input in them or that God was not a relevant or appropriate cause of them (see Jordan 1994: 62-3). So, we could maintain that God was either not a necessary condition of religious experiences or that His causal action was not sufficient to account for that sort of experience. When Swinburne argues that God's omnipresence and His role as ultimate cause of everything are grounds for the authenticity of religious experiences, he is meeting the necessary condition for God to be considered the cause of alleged theistic perceptions, but not the sufficient one, if we use Jordan's distinction.

However, pointing out a cause other than God for a religious experience does not mean to say that He was not the cause of any experience, for, as Jordan says, '[...] religious experiences could be overdetermined: they may admit of more than one sufficient causal condition at a time' (Jordan 1994: 63). In other words, in accepting that if God exists He is the ultimate cause for everything, we need to agree that God has causal input in every purported religious experience. Yet, we can still argue that the subject's perception was not caused by God in any relevant or appropriate way. So, if my experience of God is explained

by the fact that I had taken a hallucinogen or that I was socially or psychologically determined in my perception, then my experience will hardly have any evidential value for the existence of God.

Thus, the indication of a sufficient naturalistic cause to explain a report of religious experience damages the evidential value of these experiences even if one cannot prove that God, who would be the ultimate cause of the hallucinogen existing and acting or of the fact that human beings have minds or constituted societies, does not exist. According to Jordan, we need to bear in mind the difference between God intending an experience, which is something we cannot predict given His sovereign will, and His permitting an experience. In the former case, God is the appropriate and relevant cause of the religious experience. However, in the case where God only permits a religious experience but does not intend it, then He would not be appropriately connected to the purported perception of Him, and consequently this experience would not constitute evidence for God's existence. In sum, naturalistic explanations may hold that even if God exists, religious experiences may not be a genuine indication of His existence, i.e. that theism is not the best explanation of this kind of phenomenon.

It is exactly because he thought that one can provide an adequate and non-theistic account of religious experience by means of naturalistic explanations that John Mackie did not see any evidential value in this kind of experience. Based on the psychological approach of William James's *Varieties of Religious Experience* (1902), Mackie observed that 'since these experiences are of kinds which are psychologically understandable without the help of any specifically religious assumptions, they do not in themselves carry any guarantee of a supernatural source. There is nothing intrinsically very remarkable or distinctive about them. This obviously holds for any single "religious experience"' (Mackie 1982: 180). For Mackie, religious experiences are generally very dependent on a specific tradition, for typically the

experiencers only have purported contacts with supernatural entities that belong to the tradition they have adhered to.

In addition, the central doctrines of any religion are hardly given in an experience (McKim also observes that religious experiences are doctrinally ambiguous (see McKim 2001: 227)). Consequently, Mackie holds,

The very most, then, that an argument from religious experience could give us is much less than either the philosophical theist or the adherent of any specific faith demands. Even if these experiences were witnesses to some further truth, it could only be, as James says, the existence of *some* greater friendly power, whose precise identity and character are left wholly indeterminate (Mackie 1982: 182-3).

In other words, objectively speaking, if we follow James's classical account, religious experience will not be clear evidence for theism, as such. However, we may concede that it could be used to back an argument for the existence of a being with less definite contours such as the 'Ultimate' or the 'Sacred Transcendent'.

However, for Mackie, the real weakness of religious experiences as evidence in favour of theism is that they can be explained by natural means. The study of religious beliefs and purported experiences on the assumption they should be explained non-religiously has very much developed since Hume's *The Natural History of Religion* (1957). Authors like Feuerbach, Marx, Freud and Durkheim are amongst those who contributed prominently to this multidisciplinary effort. Clearly, none of the individual naturalistic accounts is a satisfactory explanation for the religious phenomenon, but conjointly, it may be argued, they can well explain fundamental strands of that complex human activity by reducing it to its psychological, social, historical and cultural components. It is also true that a naturalistic explanation of religion does not amount to a disproof of theism, since the truth-value of a belief is not necessarily related to its origin. Even so, they can still play an important role in supporting atheism, since, according to Mackie,

[...] it contributes indirectly and subordinately to the case against theism. Our reply to the argument from religious experience to further, supernaturalist, claims, even when these are

as tentative and unorthodox as those put forward by William James, was that we need not postulate any supernatural source or sources for these experiences, since they can be fully explained on purely natural grounds, by reference to otherwise familiar psychological processes and forces (Mackie 1982: 197).

For Mackie then, given that naturalism has equivalent or better explanatory power and is more economical, religious experiences cannot be taken to confirm the theistic hypothesis in any objective and compelling way.

However, there is also reason to doubt the explanatory power of naturalism relative to religious experiences. According to R. A. Naulty, Mackie's naturalistic explanation does not take into consideration a crucial particularity of religious experiences. For Naulty, the best way to explain why the experiencers consider those experiences as religious is by recognising their powerful and wonderful character, which put them beyond ordinary experience (see Naulty 1992: 2). Moreover, the effect those experiences have on those who undergo them is generally also beyond the ordinary. The degree and character of the remarkable changes in behaviour observed to happen to those who claim to have had a religious experience are hardly compatible with its characterisation as an ordinary psychological phenomenon. Clearly, as an inductive argument, this is not conclusive. Even so, claims Naulty, we can at least say that this phenomenon becomes better explained by postulating the veridical character of religious experiences than any alternative naturalistic explanation (see Naulty 1992: 7).

This argument against naturalistic explanations of religious belief can also be countered, but, for the moment, the main point I would like to make is that, once Swinburne's argument that all religious experiences should have God as their cause fails, his case become much less compelling. In other words, even if we accept that one may have reason for using theism to explain purported perceptions of God, the naturalist also has strong arguments in his favour. Even if psychological and social explanations taken in isolation can be rebutted, as a whole they form an alternative account to theism that cannot be dismissed very easily. If

so, Swinburne's attempt to provide an inductive argument from religious experience that should be accepted by everyone and that had the power of tipping the balance in favour of theism faces a considerable obstacle here.

In addition, religious experience appears to be much more adequate as a base for an argument for the existence of a general being with religious meaning rather than specifically the one postulated by traditional theism. This idea will be discussed in the next section, where I will analyse the problems posed by religious pluralism to Swinburne's argument from religious experience.

3. Religious Pluralism and the Identification of God

3.1 The problem of religious pluralism

The negative import of diversity and conflict among religious experiences is considered by Swinburne when he discusses the second challenge to the application of the principle of credulity to religious perception. Recall that this challenge casts doubts on the reliance of purported perceptions of objects *O* on the basis of frequent flaws in the recognition of *O* in the past. So, if I proved to be wrong in recognising wild birds in the past I had better not to believe my senses that I saw a certain bird *B* instead of another of a similar species *D*. Applied to religious experience, this charge maintains that since different irreconcilable divine entities are said to have been perceived in reports of religious experience, the evidentially objective value of these happenings is undermined. Analogously, if people could never agree about the recognition of a certain species of bird, we would have reason to doubt people's ability to identify that species and, consequently, whether that particular species of bird really existed. If we never agree as to the object of religious experience, this experience cannot be evidence for the existence of any of the alleged supernatural entities perceived.

Swinburne's reply to this objection is that the conflict presented by religious pluralism is in fact superficial. The variety of entities identified in religious experiences could be mere manifestations of the same referent. God (that is, the being Swinburne defines as '[...] a person without a body (...) who is eternal, is perfectly free, omnipotent, omniscient, perfectly good, and the creator of all things' (Swinburne 1991: 8)) can be named in different ways, according to various cultural traditions. However, these different cultural traditions are in the end talking about the same supernatural entity which they fail to grasp in full. In Swinburne's words:

Religious experiences in non-Christian traditions are experiences apparently of beings who are supposed to have similar properties to those of God, or experiences apparently of lesser beings, or experiences apparently of states of affairs, but hardly experiences of any person or state whose existence is incompatible with that of God (Swinburne 1991: 267).

As a result, the only possible consequence of the religious pluralism charge would be a restriction in the way we present more detailed claims of religious perception. These claims should be rephrased in more general terms (see Swinburne 1991: 266).

However, as Michael Martin points out, it is not enough to say that the different religions recognise a supernatural entity that in fact has characteristics in common with God to dismiss the threat posed by religious pluralism. Sharing common features that permit a single reference in apparently contradictory perceptions may be a necessary condition for relying on religious experiences as a source for believing that there is a God. Yet, that is in itself insufficient to grant that prerogative to them. As Martin correctly observes,

Swinburne must do more than argue that the beings described in the religious experience of non-Western cultures 'have similar properties' to those of God in the Western tradition in order to show no incompatibility. He must show that these beings do not have *any* properties that are incompatible with properties of God (Martin, 1986: 86).

In other words, Swinburne's strategy of rephrasing claims of religious experience in less committed ways only works if nothing incompatible remains after the entities allegedly perceived have been identified with the God of traditional theism. However, as Martin

observes, the task of showing that the Christian God is compatible with the image of God of many strands of Hinduism is far from easy, if possible at all. The personal identity and radical transcendence of the former seems clearly contradictory to the impersonality and pantheistic character of the latter. No reduction seems able to eliminate that incompatibility. As a result, the thesis that religious experience is in fact evidence for irreconcilable claims and thus that it has no universal and objective value appears to stand firm in view of Swinburne's proposal.

Moreover, we could add with Caroline Franks Davis that Swinburne cannot claim that the impersonal and pantheistic object of the eastern experience is merely the apparent perception of God's absence, which, according to him, is not evidence against the theistic hypothesis (see Swinburne 1991: 263). This move is barred to him because the eastern mystics do not formulate their experience in a negative way, but as a positive perception of an atheistic void reality, which is incompatible, in so far as it is contradictory, with theistic experiences (see Franks 1985: 30).

Swinburne's way of dealing with the problem of religious pluralism should be distinguished from a reduction of apparently contradictory religious perceptions to a lowest common denominator, such as the one adopted by Franks Davis (1989) and Rudolf Otto (1928). In the lowest common denominator strategy, one does not claim that non-theistic religious perceptions are merely a misinterpretation of experiences of the God of theism. Instead, one recognises incompatibilities among the different religious perceptions, but claim that they in the end refer to a single supernatural reality that is not to be identified with the God of philosophical theism, but which can generically be called 'the Ultimate' or 'the Holy'. For Franks Davis, the mystical experiences reported by believers of different religions can provide good evidence for the following 'common core' claims: (i) the ultimate reality is different from the mundane world of physical bodies; (ii) there is a deeper self in us that

depends and participates in the ultimate reality; (iii) the ultimate reality is holy, eternal and of supreme value; (iv) the ultimate reality can be described as a loving power with whom individuals can have a personal relationship, but all descriptions of the ultimate are fundamentally inadequate; (v) the focus of the experience is a sense of connection with the ultimate; (vi) the union with the ultimate is the human *summum bonum* (see Franks Davis 1989: 191). To this list, Byrne adds (vii) the ultimate can also be experienced as an impersonal principle (see Byrne 1995: 129)⁴.

However, even if a lower common denominator approach is adopted, it would still run the risk of not doing justice to the intensity and vigour of most mystical perceptions. The radical re-interpretation this approach demands would mean turning our backs on what brought about their vivid conviction that there is a God (or whatever supernatural entity they claim to perceive). Certainly the sheer fact of expressing that sort of experience in a propositional way implies a degree of diminution in its initial vibrancy, but the method postulated by Swinburne to circumvent the problem of religious pluralism threatens to disfigure completely their original content. It is not only a question of putting a vivid mental occurrence into words, but of restricting these words to something that is universally compatible with other so-called experiences of the divine. On the other hand, under the condition that it must be generally compatible, the experience of the divine will most probably become an insipid and too abstract concept that is too far from the religious life whence it was initially acquired.

Moreover, there even seems to be reason to disagree with Swinburne's view that there is no incompatibility at least regarding the perception of different lesser supernatural beings, as when one claims to have talked to Poseidon instead of to the angel that guards the seas in

⁴ If there are mystical experiences of an impersonal principle, then religious experience can also be evidence for some of the hypotheses Swinburne does not consider in his comparative assessment of theism (see discussion of this problem in Chapter 2.1.3, pp.48f.).

the Jewish tradition (see Swinburne 1991: 266). The problem with the compatibility between lesser supernatural beings is that, as Martin alludes, the figure of Poseidon and the Jewish angel belong to completely different cultural backgrounds that are hardly compatible (see Martin 1986:88). The belief in a certain entity cannot be totally detached from the world-view that works as a general framework for any experience of it. We cannot talk of these lesser supernatural beings in isolation from that framework. If so, although we can say that a purported experience of Poseidon is not in principle incompatible with that of the angel that guards the seas, their broad religious traditions are indeed irreconcilable, since one is monotheistic whereas the other is polytheistic.

So, the core of Swinburne's response to the challenge of religious pluralism to the evidential value of religious experience is a distinction between an objective element that would be common to all apparent conflicting perceptions of God, and a cultural and personal contribution that is responsible for that misleading appearance. In the common denominator strategy, which I distinguish from Swinburne's approach, pluralism causes no harm to religious experience if we take the cultural/personal input as inessential and due to our intrinsic inability of grasping the wide and deep mystery of the divine. The divine is well beyond those historical and local interpretations, but is their common final referent. Apparently incompatible claims based on religious experience would not cancel each other out because they point to the same direction ultimately. But this lower common denominator strategy will not make religious experience strong evidence for Swinburne's specific theistic hypothesis.

Moreover, Swinburne's move presupposes that we can reach a clear conclusion about the roles played by the so-called internal and external inputs to experience. This in fact is one of the most discussed issues in the epistemology of perception. A great number of intermediate positions have been suggested between the ones of naïve realism on one side

and extreme idealism on the other. In essence, the former maintains that experiences are the product of passive apprehension of external objects, which are independent of our mental states, personal opinions or cultural backgrounds. Idealism on the other hand, stresses the fact that experiences are had by subjects who shape them according to their mental structures, and end up creating what we normally take to be 'reality'. Each of these extreme positions, whose representatives we can already find in the early manifestations of Western philosophy, focuses on one of the poles of the subject-object relationship that constitutes experience. Whatever our position in this debate, given its length and importance in the history of philosophy, it is unlikely that a conclusive theory of experience will ever be reached.

What Swinburne holds, however, is that we must at least admit that there is an objective external component in our experience so that we can avoid the sceptical bog (see Swinburne 1991: 254, footnote). In other words, the principle of credulity grants us the right to believe that x exists given our perception of x by warranting the assumption that there is an external objective element in our perception. Even if we do not know exactly the parts played by the external input and by our own contribution to this relationship, we must admit there is something objective in it, otherwise we are doomed to scepticism regarding the existence of the world, which, Swinburne holds, is irrational. If we accept that religious experience is analogous to the experience of empirical objects, and if we want to avoid scepticism, we must agree that there is a hard core within religious experiences that has not been created by our minds or by our cultural tradition. If so, the recourse to the distinction between external and internal inputs to religious experiences is still a way of meeting the challenge of religious pluralism. In other words, we could still say that the apparently diverse religious experiences could well have been generated by the same fundamental reality.

According to Martin, however, this option is closed to Swinburne if it amounts to distinguishing between interpretation and perception in religious experience. This is so

because Swinburne had already dismissed this distinction in his defence of the general applicability of the credulity principle to religious experiences (see Martin 1986: 87). However, what Swinburne was specifically denying was the possibility of drawing a sharp line between interpretation and perception founded on any specific list of basic sensible characteristics, as the empiricist tradition has aimed to do (see Swinburne 1991: 257-8). We cannot identify real perception with 'perception of sensible characteristics' mainly because the notion of sensible characteristics is too vague to serve to any purpose, and because such a list will never be complete. In other words, Swinburne's rejection of the phenomenalist criterion for distinguishing between interpretations and genuine perception does not contradict his acceptance of this distinction in principle.

In any case, we can normally be said to recognise things like 'Victorian tables', although 'Victorian' will hardly figure in any list of sensible characteristics. The fact that we cannot distinguish interpretation and real perception specifically in the empiricist fashion does not prevent us differentiating between an internal and an external component in perception in general, although we have no clear criterion to tell them apart. Moreover, despite the fact that Swinburne does not state this idea explicitly, his definition of experience as a mental going-on that nonetheless is *prima facie* evidence for believing the existence of an external object clearly presupposes this differentiation (see Swinburne 1991: 244 and 254). As a result, I believe that Swinburne's distinction between a common referent to all religious experiences and the diverse names and particular ways to convey this contact with the divine is consistent with his rejection of the empiricist reduction of 'real perceptions' to those expressed in terms of 'sensible characteristics'. We can maintain coherently that in our perceptions there is a component that is provided by our own beliefs and perceptual apparatus and another one that is independent from them without committing ourselves to any explicit way of defining what belongs to what. If this is the case, then the specific incompatibilities

among different religious traditions and particular problems of expressing the fundamental common referent of religious experiences do not prevent us from postulating this common referent in principle.

However, the admission of the possibility that there is a theistic reference to all religious perceptions is much less than that which Swinburne aims at with his argument from religious experience. Instead of an entitlement claim – that is, the different religious experiences could be referring to the God of theism – he proposes that theism is the best explanation for those phenomena. However, given the irreconcilable incompatibility between the God of traditional theism and the reports of religious perception from non-theistic religions, the same referent strategy adopted by Swinburne cannot be sustained. The most those who defend the evidential force of religious experience can plausibly expect is to claim that the diversity of religious experiences refers not to God as understood by Swinburne but to a common denominator supernatural reality. This, however, falls far short of Swinburne's aim for his argument from religious experience for theism. In other words, in view of religious pluralism either his argument is implausible or has to resort to an approach that is not helpful to his programme.

3.2 The identification of theistic perceptions

J. William Forgie draws an important distinction between taking theistic experiences as an authentic perceptual occurrence as opposed to a fraud or a hallucination and taking them as experiences of God and not something else, once they are considered authentic. In other words, we have on one hand the problem of the authenticity of those experiences as perceptions and, on the other hand, the question of identification of their accusative (see Forgie 1986: 146-7).

Concerning the issue of identifying the object of a perceptual experience, Forgie proposes that we should isolate the content of the experience that corresponds to the specific features of its object and distinguishes it from something else. So, in seeing a cat and an adult lion there must be a content in my perception of those animals that permits me to identify and distinguish them such as, for example, their respective sizes. This element in perception that we take to correspond to the object of our experience, Forgie calls phenomenological content. A perception is phenomenologically justified if my identification of an object *O* in contrast with an object *Q* is based on the content provided by the perception itself as opposed to any background belief I consciously hold.

If, for example, it seems to me you are a Uruguayan and not an Argentinean after having heard your voice, but if I am not capable of distinguishing these two very similar accents, then my identification of your nationality was not phenomenologically justified. Let us say, however, that you were talking about the decisive match in the World Cup finals in the distant year of 1950, when Uruguay beat Brazil at Maracanã by 2-1, and that you were capable of providing minimal details of that match in a very enthusiastic way. Even if I could not identify your nationality by your appearance only, from what I know from alternative sources of information (first-hand testimony, books, videos, etc) I would have reason to believe you were Uruguayan. My identification of your nationality is not due solely to the content of my perception, but to what I know about football history and the way that particular event in 1950 is praised by Uruguayans in general but not so much by Argentineans. Forgie claims this way of identifying the object of our perception is based on extra-experiential considerations he calls 'auxiliary beliefs from our epistemic base' (see Forgie 1986: 148).

So, fundamentally, the identification of an object of perception is achieved by means of the phenomenological and non-propositional content of the perception itself and the

auxiliary beliefs from our epistemic base. This means that in order to be epistemically justified, the identification of *O* requires both that our perceptual apparatus is working properly, and that our auxiliary beliefs are reasonable and capable of providing justification for the perception of *O*, whatever the concept of justification we adopt.

Yet, apart from these instances of justification for the perception of *O*, there are also some special considerations that permit us to withhold assent from a perceptual belief, which, according to Swinburne's principle of credulity, is *prima facie* true. Forgie calls them 'spoilers' and divides them between those concerned with the authenticity of the experience as a real perception and those concerned with the identification of the object perceived. It is upon the second type of spoilers, the ones related to the identification of *O*, that Forgie elaborates further.

The identification of an object of perception *O* can be challenged in four ways. Firstly, via true information that falsifies the identification such as in the example above, if the person I thought was Uruguayan were to show me documents proving he is Argentinean. Secondly, if we have data that falsify the beliefs on which the identification is based, although we cannot say the identification itself is false. In this case, we can say the identification is unjustified because it lacks good reason to be made in this way. In our example, this would be the information that today's Uruguayans generally do not care about that historic footballing event, and that Argentineans are particularly interested in what happened in the 1950 World Cup. Thirdly, the identification of *O* can be said unjustified not because it is based on false information, but because it is based on incomplete or insufficient data for the purpose of justification. In this case again we are entitled not to accept the perceptual belief in question. In our example, this would correspond to a situation where I was not certain whether Uruguayans place so much value on that event in 1950, and I did not know for certain whether Argentineans were particularly interested in football history.

Fourthly, we may rationally refuse to embrace any of the rival identifications of a perceptual content because none of them provides sufficient justification for its assertions and we have no information that undermines any of the alternative explanations for what was perceived. In our example, this would be the situation when the interlocutor does not say anything particularly related to his nationality, and my ability to distinguish among Spanish accents from South America is poor. Forgie calls this last challenge of someone's perceptual belief a 'stalemating spoiler', when we have *prima facie* reasons for taking as true all the incompatible identifications of a perceptual belief, but no way of solving the conflict (see Forgie 1986: 150).

According to Forgie, Swinburne concentrates the potential criticisms of perceptual beliefs on claims that falsify the identification of an object of experience, i.e. the first and second elements pointed out above. The charges of non-justified identification and the stalemating spoilers turned out to be completely overlooked. Indeed, Swinburne holds that the identification of God as the accusative of a religious experience is made using concepts that are available to us in the perception of mundane entities (see Swinburne 1991:268). However, this only makes for the possibility that the theistic identification is correct, since the theist can associate a certain tone and emphasis in the voice he heard with God's' attribute of omnipotence, for example. Yet, even if this association is justifiable, it is far from compelling, since the 'authority' perceived in the voice heard needs not necessarily be associated with the God of traditional monotheistic religions. In other words, we may still withhold judgement by saying that either there are alternative forms of classifying the object of a purported theistic experience or that there is no way of adjudicating between them conclusively.

As stated above, although it can be argued that there is reason to take theism to be a better explanation than the naturalistic accounts for the phenomenon of religious experience

as a whole, this matter is the subject of an ongoing debate and is far from being settled. Moreover, given the problem of religious pluralism, it is doubtful whether even the identification of an entity like the God of traditional theism is objectively justifiable in the way Swinburne suggests in view of the reports of religious experience available. One would be justified in withholding judgement because there is a sort of intellectual deadlock. As a result, even if we consider that the principle of credulity can be applied to religious experience, there is plenty of room for not accepting them as a decisive and universally acceptable piece of evidence in favour of theism. As I attempted to show above, not only can this phenomenon be adequately explained in naturalistic terms but even its identification as a perception of God can rationally be put in doubt in view of religious pluralism.

As we saw, Swinburne puts the difficulty of recognising God in a purported perception as one of the forms taken by the second challenge to the application of credulity principle to religious experiences. The second challenge to the application of the credulity principle casts doubts on the possibility of identifying an object, given the difficulty of doing so in the past. So, if I proved to be bad at discriminating South American Spanish accents in the past, I had better not rely on my belief that you are Uruguayan and not Argentinean. However, when applied to religious experiences, this type of criticism is topped up with suspicions about the very possibility of recognising an entity like God through induction, since He is not easily available to our normal perceptual range and since His features are not easily identifiable through perception. As I mentioned at the end of the previous section, Swinburne responds to these remarks by pointing out that we can recognise a being we had never met before and that, although God's traditional attributes are not easy to grasp perceptually, they are similar to behavioural qualities of people. We can correctly match personal characteristics with someone we had never seen given the person in question possesses the attribute in a very high degree (see Swinburne 1991: 268).

For Forgie, however, the main obstacle posed by the problem of recognising God in a religious experience refers to the very possibility of having an experience of a person that is so unlike persons we normally encounter. It is not that we could mistake God for something else in a religious experience, but whether we in fact would ever be able to state objectively that we perceived God at all. I held previously that Swinburne's concept of experience implies the distinction between those elements in it provided by our own beliefs and those that are external to our mind. That distinction is equivalent to Forgie's opposition noted above between identifying an object *O* through its phenomenological content and recognising *O* by means of our auxiliary beliefs about *O*. When a subject *S* claims he had a theistic experience, he cannot allege this was of God in view of its phenomenological content only, since, Forgie argues, there is no phenomenological content of such an experience that could be uniquely identified with God (see Forgie 1984:16).

According to Forgie, to see the reason why no theistic experience could be identified by its phenomenological content, we should consider that 'God' is not a proper name. Instead, we should take 'God' as the abbreviation of the description of any being that matches the features of being 'the omnipotent, omniscient, all-good, everlasting and worthy-of-worship creator of the universe', an idea with which Swinburne agrees (see Swinburne 1993:241 and 291). So, to perceive an omnipotent agent amounts to having experienced the causative action of an unlimitedly powerful being. Yet, even if we agree with the idea that we can perceive the action of causation (with which Forgie disagrees see Forgie 1984: 20), there is no way of experiencing that a being has unlimited powers.

By the same token, Forgie claims, the property of omniscience, defined as having true beliefs about everything (under the limits of logic), cannot be phenomenologically grasped either. There is no experience that can guarantee by itself that its object is of somebody bearing the property of being omniscient. Nothing that you can possibly perceive in an agent

A can objectively manifest how many beliefs *A* has and whether they are true. In other words, nothing can be identified as omniscient from the mere phenomenological content of perception. Similar analyses can be made for the attributes of eternity, omnibenevolence and being worthy of worship.

If the perception of God cannot be identified by its phenomenological content only, then it must be conjoined with the auxiliary beliefs we have about God in order to be justified. According to Forgie, however, if a purported experience of God cannot be justified by the phenomenological content of perception, there is reason to hold that this kind of experience does not receive objective justification from the side of auxiliary beliefs either. This is so because religious experiences are fundamentally ambiguous, that is, no identification of their contents is any more plausible than another (see Forgie 1986: 153). In other words, when a theist claims he has had an experience of God, the beliefs on which he bases his recognition are influenced by his particular upbringing and religious formation and do not purely express a connection between his mental activity and God. If a religious experience can be identified in more than one way and if this identification owes more to the particular cultural tradition of the experiencer than to the perception itself then the recognition of a mystical perception as being an experience of God is unjustified in universal and objective terms (see Forgie 1986: 154).

Moreover, the amorphousness of religious perceptions, which is revealed by the fact that no auxiliary belief has a privileged status in identifying the object of that kind of experience, appears to lead to an intellectual deadlock. According to Forgie, the acceptance of the principle of credulity implies that all beliefs that in principle suit the experience enjoy the same presumption of truth (see Forgie 1986: 155). As a result, he says, we have a stalemate:

The stalemate emerges as follows. When we accept the POC [Principle of Credulity] we must suppose: (T) that there is *prima facie* evidence that a God-experient's relevant auxiliary beliefs are true; and that (J) that they justify his identification of the object of his

experience. But it would be arbitrary to accept T without also assigning *prima facie* truth to any belief by any person – including the belief that J is false. So accepting the POC requires us to suppose that there is *prima facie* evidence that J is true and *prima facie* evidence that J is false (Forgie 1986: 156).

In other words, the credulity principle permits us to give *prima facie* probability to any belief that is well-suited to a purported religious experience, not only theistic ones. If some of those beliefs are incompatible with theism, then a contradictory situation is created, one which cannot be solved by the principle of credulity alone. The principle used by Swinburne to show that theism is the best explanation for religious experiences falls short of doing the job, because it is compatible with too much and a specific identification of the object of those experiences is not sustainable without a great deal of conceptual background which he cannot presuppose in the non-theist.

So, the core of Forgie's argument that we cannot apply the principle of credulity to support theistic perceptions is that there cannot be any phenomenological content guaranteeing that a perception is of God. In other words, he claims that this kind of report depends too much on auxiliary beliefs, which vary enormously among the different religions and world-views and do not permit any specific identification. So, even if we allow for the idea that religious experiences as a whole are a phenomenological evidence for the belief in a unspecified Ultimate Reality, the identification of this phenomenological content with the God of traditional theism is heavily dependent on very particular background beliefs (see Byrne 1995: 133). In other words, to admit that Swinburne's arguments succeed in showing that religious pluralism is not a real threat to the evidential value of religious experience in general does not mean this is the case as regards the perception of God. As a result, religious pluralism may be a problem for the specific case of theistic experiences even if it is not a problem for the more indeterminate idea of perception of the Sacred Ultimate.

In sum, the difficulties conjointly put by the strong disanalogies between religious experience and sense perception, the need to take more seriously naturalistic explanations for

religious experiences and the difficulties posed by religious pluralism end up forming a considerable case against Swinburne's argument from mystical perceptions for theism. In the next chapter, I will analyse an alternative means of employing the phenomenon of religious experience for justifying theism so that it could be integrated into a Bayesian approach to this problem in a different way from Swinburne.

Chapter 6 – Mystical Perception and Doxastic Practice

In the previous chapter I concluded that Swinburne's approach to religious experience faces considerable difficulties in providing a universal and objective argument for theism from religious experience. The objections raised by naturalistic explanations, religious pluralism and its weak analogy with sense perception indicated that the most Swinburne could achieve was a defensive argument in favour of the possibility of grounding theistic belief in religious experience.

In the present chapter I will explore an alternative epistemology of religious experience. In what follows I will interpret William Alston, particularly in his book *Perceiving God* (1991), as approaching the matter in a very different way from Swinburne. However, as Alston himself recognises, there is some kinship between the two enterprises. Both of them consider religious experiences as putative perceptions which play an important part in the justification of the belief in God. In order to justify why religious experiences should be taken as perceptions, both authors develop a theory of perception according to which what seems to a subject to have been perceived should be taken at face value until it is proved false. Central to these theories of perception are, respectively, Swinburne's principle of credulity and Alston's concept of social doxastic practice. Yet, as Alston carefully observes,

Swinburne's principle applies to experience-belief pairs individually, in isolation, while in my approach a principle of justification that applies to individual beliefs is grounded in a defence of the rationality of socially established doxastic practices. This provides support for my position that is unavailable to Swinburne (Alston 1991: 195).

In other words, while Swinburne's principle of credulity aims to justify individual beliefs formed through religious perception, Alston's approach allows for a wider treatment of the matter, since it deals with the whole process of belief formation. In addition, as we will see

next, while Swinburne formulates an argument from religious experience, this is not Alston's intention¹. Instead, Alston aims to take the alleged perceptions of God as a direct non-inferential awareness that provides grounds for *prima facie* justification for those who participate in a particular religious doxastic practice (see Alston 1991:298).

In what follows I will be guided by a particular interpretation of Alston's proposal. A fundamental feature of my reading is that it takes the doxastic practice approach as having no claim to provide a universal argument cogent for both theists and secular believers, but as arguing that the theist is entitled to form beliefs about God according to a practice that is conditioned by a particular religious background. In this minimalist interpretation, if I do not take part in a doxastic practice then I do not have its conceptual background that allows its participants to perceive the particular kind of objects to which the practice refers. In other words, although participants in a socially established doxastic practice are practically justified in forming beliefs by means of it, non-participants are entitled to doubt its outcomes. Although it does not square very well with the initial intentions of *Perceiving God* (see Alston 1991:10) this weak interpretation seems more consistent with the results Alston achieves and is sufficient for my purposes. This point will become clearer after the exposition of Alston's approach.

¹ Notwithstanding Alston's interpretation of Swinburne's enterprise (see Alston 1991: 3, note 2). As I held in Chapter 4, Swinburne in fact uses the principle of credulity to provide *prima facie* justification for beliefs generated through purported perceptions of God. However, in doing so, what he aims to do is to use religious experience in an inductive argument in favour of theism.

What I will attempt to show in this chapter is that this more comprehensive approach by Alston sets his theory free from many of the problems that plague Swinburne's proposal. However, what Alston can achieve with that falls far short of the lofty situation Swinburne envisages for religious experience in his epistemology of religion. Alston cannot provide a universal and forceful argument that tips the balance in favour of theism and should be rationally accepted by theists and atheists alike. In order to ground this conclusion, I will start by presenting an overview of Alston's theory of mystical perception as a reliable doxastic practice. Subsequently I will test his approach against the main difficulties faced by Swinburne's proposal. In the last section of this chapter, I will analyse the extent to which Alston is able to provide objective justification for theistic belief on the basis of religious perception and how he treats this problem.

The length and detail of the following analysis is justified by the two principal aims of this thesis, namely the discussion of Swinburne's religious epistemology and the suggestion of an alternative way of using Bayes's theorem and religious experience in the justification of theism. Alston's epistemology of religious experience provides a good point of comparison that helps us to understand better this important element of Swinburne's proposal. Further, the method employed by Alston to justify religious perception will prove particularly helpful in determining how to handle the problem of the attribution of a prior probability to theism.

In my exposition of Alston I will need to untangle two important notions of justification: justification as entitlement, and justification as truth-indicative. This clarification can only come after the exposition of Alston's approach, and will be performed in section 3.2. Prior to that point I will use phrases like 'justified belief' without explicitly determining which of the two notions they refer to.

1. Alston and Mystical Perception as a Reliable Doxastic Practice

The main goal of Alston's project is to show that purported perceptions of God can be a good basis for some theistic beliefs, such as that God exists. In order to accomplish this plan, he needs to put forward both a theory of perception and a concept of epistemic justification, and to show that one may apply them to religious experience to make of it a source of justified beliefs. In fact, another preliminary consideration is in order: instead of 'religious experience', Alston prefers the expression 'mystical perception'. The reason is that the notion of 'religious experience' is too broad, and Alston proposes to focus his analysis on a narrow range of phenomena within those occurrences in people's mental life that have religious relevance. As a subset of religious experience defined in this sense, Alston considers only those happenings in which God 'appears' or 'presents Himself' to us as so-and-so (see Alston 1991: 34). Those situations in which occurs a presentation of God to someone, Alston calls 'mystical perception'.

1.1 The nature of mystical perceptions

When we talk about perception, the model that comes to mind is clearly sense perception, and Alston does not deny this (see Alston 1991: 102). The next step in his argumentation is then to show that there is such a thing as a mystical perception. In order to meet this challenge, Alston presents some important examples of alleged perceptions of God and discusses whether they correspond to what we call perception. Saint Theresa D'Avila, Angela of Foligno and many other Christian and non-Christian mystics have produced reports of mystical experiences in which they were made aware of the presence of God in a way that did not depend on any of their own efforts. They talked about their experiences as things that were completely different from the mere thinking of, reasoning about or remembering God. The experiences came to them independently of their will and left on them a strong

impression of God's presence. In sum, the reports seem at first to converge on the characteristic of a presentation of God and, consequently to qualify as perceptions (see Alston 1991: 16).

Given that the perceivers identify these cases of direct involuntary perceptual awareness with recourse to the traditional attributes of God in the leading theistic religions (see Alston 1991: 29), can then we accept *prima facie* their claim of having perceived God? In order to answer this question, Alston considers some obstacles to the idea that God could be the object of direct non-sensorial perception. A first objection could arise from considering the differences between purported mystical perceptions and our common paradigm in this area, sense perception. As a matter of fact, Alston acknowledges many striking differences between the two. In contrast with sense perception, mystical perception is: 1) not always accompanied by sensory content, 2) a rare phenomenon accessible only to a few people, 3) very dim, meagre and ambiguous in the information it conveys, 4) related to a being experience of whom is not universal (see Alston 1991: 36). Being so different from the model furnished by sense perception, can we still take the mystical experiences considered by Alston as perceptions?

Alston's general answer to this issue is based on his 'theory of appearing'. The fundamental requirement for a phenomenon to be classified as perceptual is the presentational character of the object to the perceiver and the direct awareness of that by the subject of perception. Both these characteristics are present in the reports of mystical experience considered by Alston. In other words, both sense and mystical perception share a generic identity of structure that qualifies them as perceptions according to the theory of appearing (see Alston 1991: 36). If it is the theory of appearing that sets out the requirements for an occurrence to be considered a perception, then the fact that mystical perceptions do not have

sensory content is indeed irrelevant², as long as it is a presentation of God to the direct awareness of the perceiver. Moreover, claims Alston, there is no reason to suppose that the possibilities of experiential appearance are exhausted by the powers of our sense organs (see Alston 1991: 17).

On the basis of the theory of appearing, Alston establishes some crucial tests for accepting the possibility of there being mystical perceptions. Yet in order to carry out these tests, we need to assume the possibility of God's existence. Indeed, despite being a matter of philosophical debate, few philosophers assert that it is impossible that God exists. So granted that there could be a God, the first question about the possibility of God being perceived according to the theory of appearing is this: is it possible that He should be the object of a mystical experience? First of all, claims Alston, it is important to deny any *a priori* constraints on what can appear to our experience. We know what can appear through experience itself, and there are no empirical data against the possibility of God's manifestation (see Alston 1991: 59). In fact, the opposite is the case, even considering that it is a rare phenomenon enjoyed by few. Even the infinitude embodied in the concept of God is not an obstacle to finite beings like us perceiving Him, for we do not need to perceive the whole of x in order to perceive x (see Alston 1991: 60).

In addition, Alston dismisses the theological objection that we cannot perceive God in His divine simplicity, in which God's essence is equal to His existence. We can only perceive God according to the attributes with which we normally identify Him in the major monotheistic religions. 'That means, no doubt', Alston says, 'that we grasp Him in an imperfect manner suited to our limitations, rather than that He is "seen as He is"'. But that should be the reverse of surprising' (Alston 1991: 63). In fact, there are theological reasons

² Alston defends the idea that some mystical perceptions have sensory content, but he does not base his epistemological analysis on them. For more on this see Pappas (1994) and Alston's reply in 1994a.

in the monotheistic religions, which support the idea that mystical perceptions of God are possible, like the idea of loving communion between men and God asserted by Christianity, although always in an imperfect way due to our limitations.

In sum, reports of mystical perception show a mode of consciousness distinctively perceptual, satisfying the condition for a perception on the side of the subject. On the other hand, mystical perception complies with the fundamental requirements for a perception on the side of the object according to the theory of appearing by being a presentation independent of the perceiver's will. Given these two basic conditions for a subject *S* to be said to perceive an object *x*, then we can take mystical perception as a type of perception, holds Alston (1991: 66).

1.2 The justification of perceptual beliefs and the doxastic practice approach

In order to understand how we can be justified in believing the contents of mystical perceptions, especially the belief that there is a God, Alston discusses some features of what we call justification. Firstly, we should distinguish between the activity of justifying and the state of being justified. In general, the former implies the employment of appropriate inferential or grounding relations that constitute conditions for asserting that we have reasons to believe a certain idea. The activity of justifying leads us then to a mediate form of being justified. However, the state of being justified can also be immediate. This occurs when our belief is not formed based on reasons but on more direct modes of awareness such as experience and propositional self-evidence. So we can be immediately justified in believing *p* because we perceived the object *x* to which *p* refers (see Alston 1991: 73).

Justification is an evaluative status that is subject to different degrees. One can be more or less justified as well as *prima facie* or unqualifiedly justified. *Prima facie* justification is justification until no considerations to the contrary are produced. It means we

can hold the corresponding belief as ‘innocent until proven guilty’. An unqualifiedly justified belief is one that deserves to be accepted as true independently of further inquiry. Insofar as justification is an evaluative matter, we say that to be justified is good in the sense that it is positive rather than that it is a duty, obligation or responsibility³. On this non-deontological conception of justification, to be justified in believing *p*, says Alston, ‘is to be in a *strong position* for realizing the epistemic aim of getting the truth’ (Alston 1991: 73). In other words, being justified in accepting *p* means having an adequate ground or basis for believing that *p* is true⁴.

In general, the experiential justification of perceptual beliefs is only *prima facie*. In other words, beliefs generated by both sense and mystical perception can only be held until we do not have a stronger reason for rejecting their initial probability. A perception of *p* does not guarantee to *S* that *p* is true, but confers on *S* the *prima facie* immediate justification for believing *p* to be probably true until further evidence shows otherwise. Alston distinguishes two types of ‘overriders’, that is, reasons for reducing or eliminating the *prima facie* probability of a perceptual belief *p*; reasons to think *p* to be false – which he calls ‘rebutters’ – and reasons to think that the ground of the belief does not have force in the particular instance – the ‘underminers’ (see Alston 1991: 79).

It is important to stress that, for Alston, we can be immediately justified in holding a perceptual belief, that is, we can take a belief to be true based only on pure experiential awareness of the object. For him, it is crucial that we do not confuse the levels of being perceptually justified in ‘believing *x*’ and the inferential and highly conceptualised steps

³ One of the main reasons for holding that being justified is a matter of axiology instead of obligation is that since believing is involuntary, we cannot be blamed or held responsible for accepting an unjustified belief (see Alston 1991: 73), an idea with which Swinburne also agrees (see Swinburne 1981b:25f).

⁴ According to Alston, the requirement that the ground be such as to make it objectively likely that the belief be true does not need to be attainable on reflection to the subject of the belief. In other words, the justification of *p* to a subject *S* does not need to be directly accessible to *S*, but can depend on conditions that are external to the

needed for ‘believing that I am justified in believing x ’. In the latter we clearly need to employ complex predicates to interpret and reconstruct our perceptual experience, as well as to consider the context in which the perception has occurred in order to be entitled to the high level belief that we are justified in believing x . On the other hand, we cannot deny that in the identification of the object of perception and in the attribution of a property to it we need background information. Even so, these background assumptions need not figure as propositional contents of the perceptual belief, since they can be taken as internalised skills of experiential recognition. Indeed, the fact that we rarely form beliefs about our own experience, but that we concentrate on what we are perceiving instead, is reason to believe that there is some room for purely experiential justification of perceptual beliefs (see Alston 1991: 91).

Nevertheless, Alston concedes that the immediate perceptual awareness of x and the internalised background assumptions that are needed in order to permit the identification of x form an interdependent system, which must be considered as a whole in the task of justifying perceptual beliefs (see Alston 1991: 100). Recall that for him, to be justified in believing p means having an objectively adequate ground that is strongly indicative of the truth of p (see Alston 1991: 99). Since this ground is a complex mixture of background non-sensory beliefs and immediate perceptual apprehensions, which the perceiver can handle correctly or not, we can take the formation of perceptual beliefs as a practice, an activity that can be evaluated according to standards for correct belief formation. In view of this, Alston introduces his concept of ‘doxastic practices’, which are ways of forming beliefs on the basis of grounds – background assumptions and perceptions, for example (see Alston 1991: 100). In other words, a doxastic practice is a way of forming beliefs as outputs of certain inputs such as

subject. In proposing this, Alston declares his preference for an externalist concept of justification (see Alston 1991: 75).

sense perception, mystical perception, testimony, memory or the reading of crystal balls. The problem of whether a certain perceptual belief is justified – for example, the belief that there is a God, that stems from many mystical perception reports – becomes then the problem of whether the corresponding doxastic practice is capable of generating true beliefs. In Alston's words:

We can then ask whether one or another such practice serves as a source of justification, in other words, whether the fact that a perceptual belief stems from such a practice renders it *prima facie* justified. And since I am working with a "truth-conducive" notion of justification, this will involve asking whether the practice is *reliable*, whether it can be relied on to produce mostly true beliefs (Alston 1991: 100-1).

The task of showing whether we can be justified in believing, based on perception, that there is a God then becomes the challenge of showing that forming beliefs from mystical perceptions is truth-conducive, that is, that its corresponding doxastic practice is reliable.

According to Alston, in order to assess the degree to which a doxastic practice is reliable we need to determine the truth-value of its outputs, or at least of most of them, since the more true outputs the practice generates the more reliable it will be. However, if we take the case of sense perception, which is the main model of perceptual doxastic practices, we are faced with the problem of epistemic circularity. In other words, as Alston says, 'we must either use sense perception as the source of our premises, thereby already assuming that it is reliable, or else get our premises from some other source(s) that we would have reason to trust only if we already had reason to trust sense perception' (Alston 1991: 107).

The problem of epistemic circularity in the justification of sense perception leads Alston to adopt a kind of negative coherentism. Since in order to justify the sensory perception doxastic practice (SP) we need to rely on sense perception again, and since we cannot help forming beliefs the way we do, the best alternative is to assess SP's reliability according to the amount of inconsistency it generates. In this way we judge SP primarily according to criteria set by its own principles. This form of coherentism is called 'negative'

because it merely requires for a doxastic practice to be reliable that it does not imply too many contradictory beliefs from an internal point of view (considering only the practice itself) as well as externally, in relation to other more established practices (see Alston 1991: 170). As this negative condition can always be broken in the future even if the practice has so far complied with it, this negative coherentism amounts to saying that doxastic practices that have been in use by a group of people are ‘innocent until proven guilty’. In other words, we may consider them reliable in a *prima facie* manner, until massive internal or external contradictions force us to think otherwise.

It is crucial to distinguish the *prima facie* reliability of the sense perception doxastic practice as a whole and the *prima facie* probability of a singular sensory belief. A single perceptual belief owes its initial probability to the fact that it is the output of a reliable doxastic practice, from which we can expect to have mostly true beliefs. As regards singular beliefs, what we have in this approach is a sort of foundationalism, that is, beliefs are justified as long as they result from *prima facie* reliable doxastic practices (see Eberle 1998: 302).

However, the fact that there is no neutral or common ground from which we can judge the reliability of a doxastic practice does not mean that anything goes. Alston suggests some criteria to discern whether the degree of reliability of a doxastic practice is sufficient or not. These criteria emerge from the consideration of the elements that constitute the nature of doxastic practices in general. One thing that wards off the threat of absolute relativism in Alston’s epistemology is that there is no ontological relativism implied in it. In other words, all doxastic practices form beliefs about the one single reality, and the inconsistencies between their outputs is a primary factor in inter-practice evaluation (see Alston 1991: 155).

Yet, how can we choose between the practices when there is a conflict in the beliefs they form about the world? In order to answer this question, we need to consider some characteristics of doxastic practices so that a criterion for inter-practice comparison can

emerge therefrom. Apart from forming beliefs in both a basic and inferential way, doxastic practices also involve ways of evaluating, testing and correcting beliefs formed in them.

Alston calls this set of procedures an ‘overrider system’. According to Alston

A belief is unqualifiedly justified (by the standards of the practice in question) provided it is *prima facie* justified (formed on the right kind of basis in accordance with the built-in principles of the practice), and there are no sufficient overrides (rebutters or underminers). It is not necessary for unqualified justification that the subject has *determined* that there are no sufficient overrides, only that there *are* none (Alston 1991: 159).

Overrider systems only work when they employ elements of various doxastic practices, as when SP turns to memory and deductive inference in order to check the truth of a given perceptual belief. This is an example of another characteristic of doxastic practices, namely their mutual dependence in many instances of operation and testing of beliefs (see Alston 1991: 160).

However, the acknowledgement of this deep inter-connection does not prevent Alston from defending a characteristic of doxastic practices that is central to his programme, that is, that they are irreducible to each other. As he asserts,

Each practice, as we have seen, carries its own distinctive modes of justification, its own distinctive principles that lay down sufficient conditions for justification, not only *prima facie* justification but also, through its overrider system, unqualified justification as well (Alston 1991: 162).

In other words, each doxastic practice has a considerable degree of autonomy, an autonomy that includes the power of judging a certain belief as justified without the interference of other doxastic practices. Alston does not give further justification for this claim aside from the fact that he does not see much hope that this kind of reductionist programme will work in relation to SP, and believes this could also be shown to be true of other doxastic practices (see Alston 1991: 162-3).

In addition, there are some other characteristics of doxastic practices that are also important to the problem of justification of perceptual beliefs. Firstly, we should consider their pre-reflective character, that is, the fact that we engage in them and form beliefs

therewith before we are able to criticise or even to be aware of them (see Alston 1991: 163). Secondly, this pre-reflective character comes in great part from the fact that doxastic practices are socially established by socially monitored learning, and that they are socially shared, albeit to varying degrees of universality (some groups are much larger than others are). In other words, we learn to form beliefs in a certain way from a very early age, even before we are able to reflect upon them, and this usually happens through the reinforcement and support of the social group to which we belong. Thirdly, the practice will presuppose some particular background beliefs, which will serve to inform the beliefs formed through them. Nonetheless, despite the foundational character of its background beliefs, they are not immutable, which means that doxastic practices themselves can change (see Alston 1991: 164).

These characteristics of doxastic practices reduce to a great extent the kind of justification we can aim for. In particular, the irreducible character of doxastic practices and the impossibility of justifying them without incurring epistemic circularity mean that the most we can expect here is a sort of practical rationality. By practical rationality Alston means the rationality of acting in forming beliefs the way we usually do, in contrast with epistemic rationality, which presupposes an approach to rationality that searches for its objective grounds, but which is not feasible in the present context. As a result, Alston proposes that we should consider as *prima facie* practically rational all doxastic practices that are ‘[...] firmly rooted in [their] devotees from early in life, interconnected with other practices in a form of life, and socially established [...]’, no matter how widely distributed they are (see Alston 1991: 169).

Although it seems to be fair to grant practical rationality to the kind of doxastic practices Alston suggests, we may wonder whether this approach does not end up ‘opening the gates too wide’, permitting any means of forming beliefs to be rational in this practical

sense. Alston replies to this objection by stating that the initial ungrounded plausibility should be granted only to socially established practices (see Alston 1991: 170). In addition, there are criteria for taking back the *prima facie* rationality granted to a doxastic practice. As we saw the main ones are internal or intra-practice consistency and external or inter-practice consistency. Internal consistency is just a question of not forming too many contradictory beliefs, though some degree of them is in fact inevitable. The criterion of external consistency, however, presupposes considering some doxastic practices as more firmly established than others. The *prima facie* justification of the less secure diminishes if they contradict the better established ones. In order to consider how relatively firm a doxastic practice is, we need to consider how universal is its employment, how important it is in our lives, how innate they are, how difficult it is to get rid of it or how obvious its principles seem to be (see Alston 1991: 171). Still, even taking into account these criteria, we ought to allow some room for intra and inter-practice contradiction that does not necessarily undermine the reliability of the doxastic practices involved (see Alston 1991: 172).

In addition to the criteria for assessing doxastic practices mentioned above, another way to evaluate the reliability of a doxastic practice is by referring to its self-support. In other words, the more a certain way of forming beliefs produces results that are valuable to our lives the more support it provides for itself. Self-support is then typically a practical matter, since it is intimately related to things that we do and that happen to us. However, even though a question of practical rationality, self-support can also be seen as a sign that the doxastic practice is reliable, as the source of an inference to the best explanation for the good fruits they provides us with (see Alston 1991: 174).

Alston admits that it is one thing to show that we are practically rational in engaging in a doxastic practice but quite another to claim that the doxastic practice in question is reliable. ‘Nevertheless’, he holds, ‘I believe that in showing it to be rational to engage in SP I

have thereby not shown SP to be reliable, but shown it to be rational to suppose SP to be reliable' (Alston 1991: 179). In other words, the commitment involved in adhering to a doxastic practice means that it would be incoherent to form beliefs using the formational and evaluative mechanisms the practice provides and yet not to believe it to be reliable, at least *prima facie*. Clearly, this practical argument does not amount to showing in an epistemic sense that socially established, firmly rooted, interconnected doxastic practices are reliable. The most it can aspire to is to assert that it is reasonable to take them to be reliable.

Granted that we are practically justified in assuming a doxastic practice like sense perception to be reliable, since there is no non-circular epistemic way of doing so, what about the beliefs generated by SP? According to Alston,

The lower epistemic status we have settled for attaches to the higher-level claim that SP is reliable, not to the particular perceptual beliefs that issue from that practice. As for the latter, what we are claiming is still the full-blooded (*prima facie*) justification of Chapter 2 that involves likelihood of truth (Alston 1991: 181).

In other words, it would be a level confusion to think that the particular sensory beliefs formed from SP are also only practically justified. Instead, given that we are reasonable in believing SP to be reliable, we can take sense perception beliefs as likely unless there is reason to believe otherwise. Since we cannot help believing our senses as a whole, and since we are in principle reasonable in doing so, we are entitled to take the beliefs formed therefrom as *prima facie* justifiably true.

So, granted Alston's premises, the doxastic practice approach of justification permits us to consider some beliefs as justifiably true given they are formed under a doxastic practice that is *prima facie* practically reliable.

1.3 The justification of mystical perception beliefs

The next step in the long chain of reasoning elaborated by Alston to show how religious experience can provide grounds for religious beliefs is to explain how (if at all) the

doxastic practice approach can be applied to the justification of mystical perceptions. For Alston, mystical perceptions form a particular doxastic practice insofar they display a series of similarities concerning their content (such as perceivable features and activities of God) and the way this content manifests to the perceivers (see Alston 1991: 185-6). However, it must be admitted that different religions present many alternative pictures of the content of mystical perception, and that from their sometimes mutually incompatible background beliefs they generate different overrider systems. The potential pluralism resulting from the existence of various alternative background beliefs and overrider systems in mystical doxastic practices as a whole leads Alston to narrow his analysis down to what he calls Christian mystical doxastic practice (CMP) (see Alston 1991: 192-3).

According to Alston, given the general analysis of doxastic practices made above, CMP displays features that are typical of them (see Alston 1991: 187)⁵. It is acquired and engaged in well before one is explicitly aware of the practice as such. CMP has an overrider system based on a distinctive set of presuppositions. Its participants are involved in other practices as well, with which CMP interacts. CMP is socially transmitted and shared, and is subject to change, as its background beliefs evolve in history (see Alston 1991: 187-8). Given these structural elements that constitute a doxastic practice, CMP should then be entitled to the same *prima facie* reliability to its participants as any way of forming beliefs with such characteristics.

Nevertheless, although CMP has the same basic features as other *prima facie* reliable doxastic practices, Alston acknowledges some reasons for denying this status to the Christian Mystical Practice. He rejects these objections on the grounds that they commit either the fallacy of double standards or the unjustified move of epistemic imperialism. By the fallacy

⁵ Strictly, in the mentioned passage Alston is talking about mystical doxastic practices in general. The application of the same reasoning and same conclusion to CMP, however, is clearly unproblematic.

of double standards, Alston means the denial to CMP of something that is granted to other doxastic practices with no especial reason for this discrimination. Epistemic imperialism means rejecting the reliability of a doxastic practice because of the requirements proper to a different one. Given the autonomy of doxastic practices and the irreducible character of their distinctive modes of justification, it simply does not make sense to rule out one doxastic practice as unreliable because it does not follow the pattern of another.

I will analyse the criticisms to this approach and Alston's replies later on in this chapter. For the moment, what is important to notice is that once we accept the practical rationality argument for taking doxastic practices as *prima facie* reliable, and once we recognise the Christian mystical perceptual doxastic practice as a full member of that class, we have no reason to deny that CMP is *prima facie* justified. As a result, given the belief that there is a God is one of the main outputs from CMP, the participants of this mystical doxastic practice are at least initially justified in taking it to be true.

2. Alston's Approach and Swinburne's Difficulties

As we saw in the previous section, Alston's way of using religious experience to ground theism depends upon taking the belief that there is a God to be a product of a doxastic practice that is both perceptual and based on a religious conceptual scheme. According to Alston's theory, the theist is justified in his belief that God exists because he takes part in a socially established way of forming beliefs that is irreducible and autonomous as regards any other doxastic practice, although it interacts with many of them. The justification for his belief stems from the fact that the mystical doxastic practice to which he belongs permits him to take most reports of perception of God as true until good reasons to the contrary are provided.

As I noted in the introduction to this chapter, the main difference between Alston's and Swinburne's approaches to religious experience is that in the latter, the principle of credulity is intended to justify *prima facie* each belief individually. Further, for Swinburne, the justification of religious experience reports makes for a powerful and universal argument for theism, while in Alston mystical perceptions ground theism non-inferentially, through immediate awareness, and are a basis for a *prima facie* belief in the corresponding doxastic practice. As I held in Chapter 5, however, Swinburne's proposal for religious experiences faces many serious difficulties. In this section, we will see how Alston's alternative fares in view of these problems faced by Swinburne's position. Recall that my reading of Alston's approach is that he does not intend to provide an argument for the best explanation for theism, as Swinburne does. Instead, Alston's account is interpreted here as making an 'equal entitlement claim', i.e. that the participants in CMP are practically justified in believing that CMP is reliable, and thus particularly entitled to accept its outputs as true.

2.1 Naturalistic explanations and the Christian mystical doxastic practice

As I described in Chapter 5, Swinburne provides two answers to the problem of naturalistic explanations for religious experiences. First, he suggests that since, according to theism, God is the ultimate cause of everything, the only way to show that He is not the cause of religious experience is by proving that God does not exist. As we saw, however, the idea that 'if there is a God, any experience that seems to be of God will be of God' (Swinburne 1991: 270) is untenable. Second, Swinburne asserts that naturalistic explanations lack the explanatory power of theism in accounting for religious perceptions. Theism explains the occurrence of religious experiences better than naturalistic explanations do. However, we saw that this could only amount to an objective argument for religious experience if there were only one way of interpreting the content of religious experiences. Yet, it seems to be

the predominant position in the epistemology of perception that in order to identify the object of a perception we need background concepts (see, for example, Forgie 1986: 146). Further, in view of a unique object of perception like God, the amount of auxiliary beliefs is so large and so specific that, given religious pluralism, any argument for theism from religious perception faces enormous obstacles. So, even if the secular believer need not necessarily embrace a naturalistic explanation, he is certainly justified in suspending judgement as regards the explanatory power of theism to account for religious experience. As a result, even if the existence of naturalistic explanations does not totally undermine the evidential value of religious experience, it blocks its function as a universal, compelling argument, which was Swinburne's original intention. In other words, if we do not accept the corresponding auxiliary theistic beliefs, we do not have to accept that religious experiences are better explained by theism than by naturalistic accounts.

The difficulty posed by naturalistic explanations to Swinburne's approach to religious experience simply does not affect Alston's position at all. What the latter aims to show is that the participants of CMP are justified in forming beliefs using mystical perceptions as inputs and given the overrider system and conceptual background beliefs furnished by mainstream Christianity. Naturalistic explanations do not undermine this claim but only offer an alternative to it⁶. In sum, according to my interpretation, Alston's position regarding religious experience does not face the difficulties posed to Swinburne's theory by the naturalistic explanations. For the doxastic practice approach, it is sufficient that the participant in CMP be rationally entitled in a pragmatic sense in forming beliefs about God from this kind of perception. As I read him, Alston is not trying to show that all must rely on the outputs of CMP.

⁶ Nevertheless, Alston also suggests some arguments against the efficacy of naturalistic explanations of mystical perceptions (see Alston 1991: 230ff).

2.2 CMP and the analogies with sense perception

We saw in Chapter 5 that one of Swinburne's most fundamental arguments for the evidential value of religious experience was that if we were sceptical of religious perceptions, we should also be sceptical of sense perception, which is clearly an irrational position. In other words, there is a strong analogy between religious experience and sense perception so that the application of the credulity principle to the latter should also be granted to the former (see Swinburne 1991: 254n).

A number of criticisms of Swinburne's claimed analogy were set out in Chapter 5.1.

They related to:

- a) the impossibility of repeating the causal conditions for the occurrence of theistic perceptions;
- b) the lack of the characteristic checking procedures found in ordinary perceptions;
- c) the lack of criteria for falsifying a perceptual belief by means of better positioning or better training.

As we can infer from the exposition presented in this chapter, these criticisms do not apply to Alston's approach to religious experience with the same force. In postulating that CMP is a particular perceptual doxastic practice, he willingly embraces the idea that an alleged perception of God can only happen under the framework provided by a particular doctrinal background. This particular conceptual background provided by a specific tradition is also responsible for the override system of CMP, whose job is to criticise and test the mystical perception claims in the light of their consistency with the Christian doctrine. Since the checking procedures are predominantly internal, the authenticity of a particular theistic perception is a matter of coherence with the doxastic system provided by CMP.

Above all, however, in contrast with Swinburne's proposal, the analogy between sense perception and mystical experience does not play the role of justifying theistic perception in Alston's epistemology of religious experience. As Alston argues,

It is true that I sometimes point out that critics of CMP are employing a double standard, criticizing it for features that it shares with SP, which they accept. However, responses to criticisms aside, the positive argument for CMP is based on my theory of doxastic practices. The basic contention is that it is *prima facie* rational to engage in CMP, not because it is analogous to SP in one or another respect, but because it is a socially established doxastic practice; and that it is unqualifiedly rational to engage in it, as we shall argue in the next chapter, because we lack sufficient reason for regarding it as unreliable or otherwise disqualified for rational participation. It is true that it is rational to engage in SP for precisely analogous reasons, but no explicit reference to SP is required to present the case for CMP, any more than it is necessary to bring in an analogy with swimming to present the case for the legality of jogging. It is true that swimming is legal for precisely the same reason that jogging is legal (it violates no laws), but it would be grotesque to suppose that the case for the legality of jogging depends essentially on an analogy with jogging (sic) [swimming] (Alston 1991: 223-4).

In other words, the analogy with sense perception is important only as a reply to the accusation of circularity in the justification of religious perceptual beliefs. SP and CMP are made part of the same genus, namely that of 'doxastic practices', a key concept in Alston's solution to the problem provoked by the epistemic circularity we are trapped in through attempting to justify sense perception claims. Indeed, apart from this basic similarity, Alston frequently emphasises the discrepancies between these two kinds of perception, particularly in their overrider systems, their respective degree of universality and the way each of them fits into the general category of doxastic practices. All this emphasis on the differences between sense perception and mystical perception would make for a bizarre strategy if Alston's argument were basically from analogy (see Alston 1991: 223). In addition, he frequently stresses the likeness of CMP to doxastic practices other than SP (such as memory) (see Alston 1991: 199 and 216, for example).

Alston's argument against scepticism towards SP is that it is practically irrational, since we presuppose SP's reliability in our actions (see Alston 1991:150). However, if withholding judgement is not a serious option for all of us who take part in SP, this does not

seem to be the case as regards CMP. In other words, those who were brought up in the appropriate Christian communities cannot help forming beliefs from CMP, and would be practically irrational if they did so. However, the same charge of irrationality cannot be pressed against the naturalist. For the naturalist, scepticism towards CMP is not practically irrational, since he is not a participant in it. If this reasoning is correct, then, in contrast to Swinburne, Alston's position admits that someone might be sceptical regarding religious experience without denying the evidential value of sense perception, since it is clearly possible that someone belongs to SP without participating in any of the various mystical perception doxastic practices available. On the other hand, the participant in a specific religious doxastic practice, say CMP, may claim the same type of justification as the one available to other legitimate practices, provided that CMP has the crucial characteristics of doxastic practices in general.

2.3 The problem of religious diversity

Alston deals with the problem of religious diversity very carefully. The reason for this special treatment is that, in contrast with other difficulties in his approach, this particular problem cannot be dismissed under the headings of 'double standard' or 'epistemic imperialism' (see Alston 1991: 255). The problem of religious diversity is considered by many critics and Alston himself the main challenge to be faced by his doxastic practice approach to religious experience.

We can pose the religious diversity question by saying that, if different religious perceivers claim to have experienced different supernatural entities that are in the end incompatible with each other, then we had better not to take their reports at face value. Religious diversity raises the possibility that all mystical perceptions are delusive. The best

way to explain this diversity in religious experience reports may be to take them as mere social constructs that vary in history and society.

As we saw, Swinburne responds to this problem by distinguishing between the objective and universal element to which these perceptions refer from the specific cultural and inessential inputs projected into it. Religious diversity would only occur as a result of ascribing different meanings to the same unique referent. This is analogous to the various interpretations we can give to a single event accessible to sense perception. To handle it, we just need to distinguish interpretation and reference in perception, without establishing what defines each of them too precisely (without saying that the language of perception should be reduced to phenomenal terms, for example). To answer the problem of religious pluralism we simply need to rephrase the particular reports of religious perception in more general terms (see Swinburne 1991: 266). As we saw, however, religious pluralism represents a serious problem for Swinburne's approach when it comes to the identification of God in religious experience. The range of particular auxiliary beliefs needed for recognising a perception as theistic makes it very difficult to hold an argument from religious experience for theism.

Very much in line with Swinburne's position, Alston himself objects to characterisation of the problem of religious diversity which I presented above. According to Alston, we need not accept that in view of incompatible reports of religious experience they all should be taken as fictitious. There can still be a transcendent reality, but it would be one that human cultures have been unable to recognise entirely yet (see Alston 1991: 267). As a result, Alston prefers the following formulation of the problem posed by religious diversity:

Since each form of MP [mystical doxastic practice] is, to a considerable extent, incompatible with all the others, not more than one such form can be (sufficiently) reliable as a way of forming beliefs about the Ultimate. For if one is reliable, then most of the beliefs that issue from it are true; and hence, because of the incompatibility, a large proportion of the beliefs issuing from each of the others will be false; and so none of those others is a reliable practice (Alston 1991: 268-9).

So, even if it is possible for one mystical doxastic practice x to be justified, the other ones that are incompatible with x will not be reliable at all. However, we have no external grounds to justify the reliability of x in view of the others, rather only reasons furnished by each doxastic practice in their particular system of beliefs. As a result

[...] *even if some form of MP is reliable*, we have no non-question-begging grounds for determining which one that is; and hence it cannot be rational for a person to suppose any particular form to be reliable (Alston 1991: 269).

Posed in this way, the problem of religious pluralism is of a very distinctive sort in the doxastic practices approach. On the one hand, it refers to inter-practice questions, since it asks for criteria external to each religious doxastic practice. On the other hand, it does not consist in showing that there are massive contradictions with a more firmly established practice, since none of the rival MP's displays this credential. Alston's critics conclude that, given that there are no independent reasons acceptable to all practices to show that one form of MP is epistemically superior to its rivals⁷, we have no justification to take any of them as reliable.

In response, Alston suggests a comparison with a case of conflicting beliefs in other doxastic practices. When different beliefs are formed from sense perception about the same occurrence, we have the means to decide which of the conflicting outputs is correct, given the mechanisms of checking provided by SP. It is at least in part because we have the means of testing the rival reports that this disagreement weakens the confidence each witness may have in their own version. An analogous situation occurs if we consider the relative reliability of different doxastic practices about a single matter, which is objectively verifiable, like the weather forecast. In this case we have methods for determining which report is the most probable and consequently which weather forecasting practice is the most reliable according

⁷ In fact, Alston believes that there are such independent reasons for claiming the superiority of the Christian Mystical Doxastic Practice, but he prefers to work with a worst case scenario (see Alston 1991: 270).

to the statistical data. According to Alston, it is the existence of these methods which undermines the truth-value of particular beliefs or discredits entire doxastic practices (see Alston 1991: 270-1).

However, there are two reasons to believe that no such methods for adjudicating among doxastic practices in the case of conflicting religious perceptions exist. First, each religion constitutes an autonomous doxastic practice, with different criteria of testing that are non-reducible to each other. Second, we know of no independent objective parameter to judge which doxastic practice fares better in the aim of forming beliefs about God's manifestations. If we do not have any way of showing that CMP is right or wrong, Alston asks, '[...] why should we take the absence of such a proof to nullify, or even sharply diminish, the justification I have for my Christian M-beliefs [Manifestation-beliefs] (Alston 1991: 272)?' In other words, the absence of a method to decide the most reliable of conflicting doxastic practices means that religious diversity is not a reason for a Christian to abandon his confidence in CMP.

Yet, Alston does not deny that this problem weakens the degree of justification the Christian can claim for CMP. In fact, if the sole basis for a positive evaluation of CMP were that it is a socially established doxastic practice that has not been shown to be unreliable, then religious pluralism would reduce its epistemic status to a great extent (see Alston 1991: 275-6). Yet the existence of a significant self-support in favour of CMP counterbalances that diminishing effect, and confirms the Christians' confidence that this practice gives at least a good approximation to the truth. In his words,

Given the "payoffs" of the Christian life of the sort just mentioned [growth in sanctity, serenity, peace, joy and other fruits of the spirit], one may quite reasonably continue to hold that CMP does serve as a genuine cognitive access to Ultimate Reality, and as a trustworthy guide to that Reality's relations to ourselves, even if one can't see how to solve the problem of religious pluralism [...] (Alston 1991: 276).

The Christian could still ‘sit tight’ with CMP, even considering that the experiential basis provided by mystical perceptions is much less significant than is claimed in the Christian doctrine and even if there is no means of saying whether CMP is more reliable than other mystical doxastic practices. The participant can still enjoy the instances of self-support provided by the practice and can be consoled by the negative claim that there is no reason to say CMP is not the most reliable religious practice.

In response to criticisms of his solution to the problem of religious diversity⁸, Alston argues that the adept of a certain religious mystical doxastic practice may lack universal grounds for arguing that the outputs of other incompatible practices are false. Still, he is justified in doing so from the point of view of his own practice. As long as we have no means of deciding which of a range of conflicting practices is false, we cannot say that their respective adherents are not justified (i.e. entitled) in forming beliefs according to them (see Alston 1994b: 179-80).

In sum, the religious diversity problem prevents any mystical doxastic practice from using an offensive strategy, such as that adopted by Swinburne, but it does not stop a religious doxastic practice acting defensively. The existence of rival practices precludes CMP from holding in an overall independent way that the other, incompatible, practices are not justified, but it gives room for CMP to argue that this incompatibility does not make it unjustified. As we can see, the price of avoiding this difficulty is to weaken and particularise the claim of justification for CMP, since given Alston’s approach we must admit the same kind of position for other socially established religious doxastic practices, such as the ones that stem from Islam, Judaism and other religions. Their adherents can claim that they are reliable with equal justification⁹.

⁸ See Schellenberg 1994.

⁹ Another criticism that deserves to be mentioned is in Tilley (1994), in which it is argued that diversity of positions is a problem even within CMP, an issue that Alston clearly acknowledges (see Alston 1994b: 176-8).

In conclusion, religious pluralism poses considerable problems for a universalistic argument from religious experience of the kind Swinburne proposes, but it is not so harmful to Alston's proposal, at least the way I am reading it. In other words, although a positive argument for theism from the phenomenon of religious experience looks problematic in view of religious pluralism, the possibility of forming beliefs through CMP can still be defended. The particularity of the conceptual background knowledge needed for identifying God in a mystical perception is not a problem for an approach that admits the existence of many particular religious doxastic practices. Still, as usual regarding any philosophical project, Alston's approach is not totally free from objections. In the next section, I will analyse a couple of them and see what then remains of Alston's position regarding religious experience. In doing so I will be able to discuss whether I can make any use of this theory in my own methodological suggestion for the epistemology of theism in the final chapter.

3. Alston and his own Critics: The Degree of Justification of CMP

In the previous section, my intention was to show that Alston's handling of religious experience could escape almost totally unscathed from the main criticisms directed against Swinburne's approach. In this final part of the present chapter I aim to examine what we can expect from a proposal that proved to be so immune to objection. In order to do so, let us see the consequences for Alston's position of two objections raised specifically against his ideas on the matter. Given the enormous literature on Alston, the brief review that follows cannot claim to be exhaustive. My interest here is simply to have a clear picture of the alternative that Alston's approach to religious experience presents to Swinburne's proposal. In doing so, I also want to reveal the limits of the former in order to see whether I can still use it in my alternative account of how to employ Bayes's theorem in the justification of theistic belief.

The two problems I will analyse here refer to 1) Alston's idea that mystical doxastic practices are entitled to their own checking system, and 2) that his proposal gives grounds only for a subjective belief that there is a God.

3.1 The checking system of CMP

According to Evan Fales, any type of perception must meet some criteria in order to stand as an authentic way of putting us in contact with extra-mental reality (see Fales 1996: 22). For Fales, the crucial problem with a content as tenuous as those of theophanies is that it makes the task of checking the accuracy of beliefs founded upon them very difficult, or in Alston's terminology, their overrider system is very deficient. In his examination of the testing system in CMP, according to Fales, 'it will emerge that there is a quite general difference between the domains of SP and CMP which hamstrings cross-checking in CMP and precludes any parity with SP', a move that would be essential to Alston's pretensions (see Fales 1996: 25). The key factor behind the main strategies of confirmation and cross-checking of perceptual beliefs is a presupposition about the causal structure of the world and our place as perceivers in that structure. This presupposition consists of three theses: 1) events of significance to sense perception have multiple causes and effects, 2) causal interactions can be combined in many different ways, 3) perception of an object involves the creation of a causal link between features of that object and our sense experience (see Fales 1996: 28).

According to Fales, '[...] proper cross-checking requires a causal picture linking God with theophanies "in the right way", a picture that CMP doesn't supply', and which is a necessary condition of any doxastic practice aimed to provide information about extra-mental objects (see Fales 1996: 34). He rejects the criterion of authenticity of mystical perceptions based on the good fruits that result from it because as the devil could well disguise his ends

through good works, there are no clear means to tell whether a mystical perception was of God or Satan. Moreover, not only do we not know what God's intentions are, but we also have very plausible explanations of the good fruits of mystical perceptions which do not appeal to the existence of God, but rather to sheer secular reasons such as those pointed to by psychology and anthropology. As a result, while in sense perception we can check the authenticity of empirical beliefs through the many causes and effects observable in a physical causal chain, we cannot check the place of God in the perceptual causal chain. 'The trouble with theophanies seems to be, briefly', argues Fales, 'that we have no such multiple lines of detection by means of which to "triangulate" the alleged divine cause; or at least none that don't converge [...] on some mundane segment of the causal story' (Fales 1996: 36). In conclusion, CMP does not have a sufficient override system to confer an objective and perceptual character to the beliefs it forms (see Fales 1996: 38).

Although Fales' critique of Alston echoes that of others¹⁰, I do not believe it damages Alston's proposal very much, at least in the reading I am giving to Alston here. First of all, Alston claims quite correctly that we only know of what we can perceive by experience (see Alston 1991:59). *A priori* criteria for establishing criteria of possible objects of perception need positive justification, and the ones acceptable currently do not rule out God as such an object. In addition, for Alston, the perceptual character of mystical perception is provided by the fact that an immediate awareness of God as doing or being so-and-so does not depend on the perceivers' effort. Further, from the side of the object of perception (God), the reports describe a presentation to the perceivers' experience. We could only deny that there could be a presentation of God in a mystical perception if we had reason to doubt the sincerity of the reports or had reasons ruling out the possibility that God exists and can cause a perception of

¹⁰ See also Gale 1994a.

Him in us. Until these reasons are provided, we can hold *prima facie* that God is presented in a mystical perception, given the specific background concepts of a theistic doxastic practice.

In requiring that mystical perception be submitted to the same kind of test available to sense perception, Alston's critics make the mistake of epistemic imperialism. As I held above, Alston has no trouble in admitting that CMP's override system is not as good as the one SP displays (see Alston 1991:220). Alston does not deny that SP's system of checking enables us to distinguish more clearly between correct and incorrect sensory beliefs than that which we obtain from CMP concerning mystical perceptions. This, however, does not justify the imposition of the parameters available in sense perception to mystical perception, since they refer to different kinds of reality. These kinds of reality may well require different types of tests, and that is what his position regarding the autonomy of socially established doxastic practices aims to secure. As Alston holds, to claim that the tests applicable to sense perceptions are a necessary condition for any extra-mental experience demands arguments that have not been furnished by his critics so far.

In sum, once we grant to Alston his theory of perception and his doxastic practice approach, it becomes very difficult to deny that mystical perceptions qualify as perceptual and that they belong to a way of forming beliefs that displays its own ways of criticising and checking the authenticity of its outputs. As we saw, given that Swinburne proposes an argument from religious experience aimed at everyone, this defence of religious perception based on a particular system of checking is not sufficient for his purposes. As for Alston, if there is a weak side in his proposal regarding religious experience, it does not appear to be in his claim that there is nothing wrong in considering them as perceptual in character.

3.2 CMP's degree of justification

By far the most frequent remark in the available literature against Alston's proposal relates to the type of justification he provides for the Christian mystical perceptual doxastic practice. The idea of a practical justification for the reliability of doxastic practices is particularly criticised. Recall that for Alston, since we do not acquire a doxastic practice consciously, we only become able to criticise it after employing it for a long time to form beliefs. Given that we cannot help forming beliefs in this specific way, and since all attempts to justify this process end up in epistemic circularity, the best we can aim for is to show that we are reasonable in believing it to be reliable.

According to Mathias Steup, however, the fact that we cannot help engaging in a doxastic practice does not mean we are irrational in being sceptical about the outputs of that same doxastic practice. For him,

Epistemic reasons for skepticism about SP must be judged on their own merit, without dismissing them right off the bat because it is practically impossible to act upon them by shutting down one's sensory faculties. Alston's position, however, carries with it such a preemptive, and in my opinion, unjustified dismissal of skepticism about the reliability of SP (Steup 1997: 414).

The room for scepticism, according to Steup, is due to the fact that the recognition of the impossibility of taking myself out of a doxastic practice is a psychological statement with nothing to do with the epistemic credentials of this belief-forming mechanism. The fact that we are stuck with a doxastic practice does not mean we need necessarily take it to be reliable. From the fact that SP is practically rational it does not follow that SP is epistemically reliable. For Steup, what complicates the project of justifying perception epistemically is the constraint on epistemic justification posed by Alston. In requiring that for a belief to be epistemically justified it must be based on grounds that are reliable indication of the belief's truth, Alston was simply demanding too much, making this enterprise impossible.

Along the same lines, Norman Kretzmann remarks that because Alston's concept of justification is too demanding, the author of *Perceiving God* fails to justify mystical

perceptual practices in a truth-conductive way (see Kretzmann 1994: 89). What Alston ends up offering us is a justification of religious doxastic practices that is basically deontological, given the character of the notion of practical rationality (see Kretzmann 1994: 86). The problem with justifying doxastic practices on the grounds that it is unavoidable to believe in their outcomes since they are strongly established in our society and firmly embedded in our psyches is that it is too permissive, for even seances and newspaper horoscope would then be reliable practices (see Kretzmann 1994: 88). Consequently, for Kretzmann,

[...] what Alston calls the perception of God can make an important contribution to the grounds of religious belief only subjectively. Objective grounds of religious belief are still to be sought mainly or solely in the old, familiar, still vital enterprises of natural and philosophical theology (Kretzmann 1994: 68).

In other words, what it turns out that Alston demonstrates is something that a broadminded atheist would easily grant, namely that St. Theresa was entitled to believe that God exists in view of her mystical experiences and given her particular background beliefs. This means, however, only that she did not forge a false report and that her reliance on mystical perception was consistent with her religious beliefs, which is still far from implying that her experiences were objectively valid or veridical.

Yet, although these criticisms hit a very sensitive point in Alston's epistemology of perception, it is still possible to find robust responses to them in his writings. Let us start with the idea that scepticism is still a possible alternative in view of the practical justification Alston suggests for the reliability of SP, since the central question of epistemic justification would still remain untouched. For the author of *Perceiving God*, scepticism regarding the socially established doxastic practices we are used to employing is not a serious possibility, since it would amount to the incoherent position of acting at all times on the assumption that they are reliable and yet simultaneously doubting their capacity to produce true beliefs (see

Alston 1991: 150). The question is not whether SP is reliable, which we do not really doubt, but how we can show that it is so (see Alston 1991: 106). Since there is no deeper or more objective position from which we could judge our doxastic practices, given that we need them to form beliefs anyway, the best we can do coherently is to assume that we are more rational in supposing them to be reliable, as we are already doing in practical terms.

Still, in doing so, Alston is not claiming that he demonstrated that SP is epistemically rational, in the sense of it being probably true that SP is reliable (see Alston 1991: 180). The critics above are right to stress the difference between being epistemically and practically rational. Alston in fact also emphasises that he never intended to provide epistemic justification for SP or any other doxastic practice (see Alston 1991:182 and 1994b: 172). Indeed he has not been able to justify doxastic practices epistemically simply because this does not seem to be a feasible task (see Alston 1994b: 177). Clearly, one way out of this situation is to deny the concept of justification as implying likelihood of truth, as Steup suggests. The problem with this weaker alternative is that in doing so we abandon the main objective of belief formation and cognition in general, which is the search for the truth (Alston 1991: 148).

Moreover, Alston claims that, although his approach can produce only a practical justification for the reliability of established doxastic practices, his proposal positively provides epistemic justification for particular beliefs that stem from those practices. Failing to realise this distinction involves a level confusion (see Alston 1991: 181). In other words, assuming that we are reasonable in taking SP to be reliable, this practical justification permits us to take the beliefs formed therefrom as *prima facie* likely to be true. Beliefs receive support within a doxastic practice; that is, unless they are ruled out by the overrider system,

they can be considered *prima facie* probably true. The reason for a particular belief may be only internal in Alston's proposal, but this is so, again, because to him we have no external grounds for the rationality of any broad domain of belief. In sum, the Christian is entitled (on grounds of practical rationality) to regard the outputs of CMP to be epistemically (i.e. in a truth-conducive way) justified. However (and this is perhaps Kretzmann's main point), the non-Christian is entitled to the opposite stance concerning the epistemic justification of CMP's outputs.

Yet, even if CMP does not provide universal grounds for theistic belief, these are not subjective either, as Kretzmann implied above (see also Gale 1994a, in which this assessment is expressed in the title itself). Rather, the belief is based on interpersonal and socially shared grounds, which is also a means of putting considerable constraints on individual beliefs about God through the override system¹¹. In this sense, the doxastic practice approach is not too permissive, since not every way of forming belief has a strong override system nor is it necessarily socially established. The social or interpersonal character of doxastic practices prevents the individuals that take part in them from believing whatever they want. Instead, they need to follow rules and patterns that are included in the background knowledge of the community of believers to which they belong. Alston certainly opens the gate for some suspicious belief forming systems, but he also acknowledges grounds for the criticism of existing practices which can lead even to their abandonment, given a certain amount of either internal or external inconsistency (see Alston 1991: 170).

Still, even if we grant that in Alston's system the justification of the belief in God is not subjective and that his approach is not too permissive, critics are right in arguing that we

¹¹ About this, see also Alston's reply (1994a) to a paper by Robert Adams (1994).

have no objectively valid argument for theism from his epistemology of religious experience.

As Gale correctly points out:

Thus, Alston's apologetics can be seen as giving some reassurance to those well launched along the pathway of faith that their faith is not a completely unreasoned one, though those who are not, in James's wonderful phrase 'among the saving remnant' will have different intuitions about this. Maybe this is all Alston can really hope to show (Gale 1994b: 148).

Alston also admits that we do not have an objective argument from religious experience like the one Swinburne intends to provide¹² (see Alston 1994b: 175). In fact, this admission fits well with my interpretation of Alston's programme, i.e. that the ground furnished by CMP is accessible and effective only for those that participate in that specific doxastic practice.

In addition, it is an important and sometimes overlooked aspect of Alston's proposal that the grounds religious experience gives to the belief that there is a God should be combined with other sources for the justification of theistic belief, as he holds in the final chapter of *Perceiving God*. In this sense, his contribution is not an alternative to the use of natural theology advocated by Kretzmann, but a complement to it. CMP serves to render its participants *prima facie* justified in believing that God exists through reported perceptions of God that pass the scrutiny of CMP's overrider system, but this is not the end of the story. In the debate with non-participants of CMP, the Christian will need to employ other resources such as, for example, the arguments of natural theology. In Bayesian terms, CMP permits its participants to ascribe a considerable prior probability to theism given their particular religious background, but the likelihood of the theistic hypothesis ($P(e/h.k)$) can only be shown to be high given commonly acceptable evidence.

However, the critics of Alston's enterprise seem correct in one crucial point, namely that the degree of justification CMP can expect must be much lower than the one enjoyed by basic doxastic practices like sense perception, memory and testimony. According to the

¹² In my view, but perhaps not in Alston's. See note 1 of this chapter.

author of *Perceiving God*, even considering the many instances that count against the reliability of CMP, its adherents can still count on it as a reliable way to form *prima facie* true beliefs about God. Alston concedes that CMP is less firm than many other doxastic practices, since it generates more inconsistencies than other more established ones (see Alston 1991: 236), that its override system is much less efficient than SP's (see Alston 1991: 220), and that the religious diversity problem diminishes our confidence in CMP (see Alston 1991: 275). However, he still insists that this does not sharply diminish the justification the Christian has for M-beliefs in CMP (see Alston 1991:220, 238 and 276). Despite all these problems, its participants can still enjoy the *prima facie* epistemic justification to their beliefs about God provided by CMP (Alston 1994b:175 and 1991: 194).

Yet, there seems to be a problem with taking a belief forming system with so many problems as reliable in an unqualified way. It seems more accurate to say with Gale that the addition of these multiple little flaws ends up making a cumulative case against the reliability of the mystical perception doxastic practice (see Gale 1994b: 147). On the other hand, Alston is right in claiming that we cannot say that these difficulties undermine CMP totally or that its adherents are irrational in forming beliefs from it (see Alston 1991:275).

A way out of this deadlock is an idea with which Alston agrees but which he does not develop very much, namely that justification is a matter of degree (see Alston 1991:72). As Robert McKim observes, there are many gradations between the full-blooded *prima facie* justification provided by a firm doxastic practice like sense perception and the very weak reliability conferred by a suspicious belief forming mechanism like the reading of crystal balls (see McKim 2001:247).

McKim suggests three parameters that reduce the practical rationality of judging a doxastic practice to be reliable, which he calls 'restrainers'. The first is the existence of disagreement, which tends to indicate a low degree of justification for any of the conflicting

observations (see McKim 2001: 249). The second is the extent to which what is perceived is ambiguous, uncertain, and capable of being identified in different ways (McKim 2001: 250). The third parameter refers to how much the doxastic practice is operating in conditions that cast suspicion of malfunctioning or of working under extreme pressure (like seeing a lake in the desert under high temperature and low humidity). ‘When a restrainer is operative’, holds McKim, ‘the doxastic practice in question may still be relied upon, but only with caution and in awareness that one may be out of one’s depth. The justification that is conferred in such conditions is reduced’ (McKim 2001: 251).

As a result, McKim proposes that Alston’s two alternatives of either totally accepting or totally denying a doxastic practice are not the only ones available. In his words,

There are alternatives to either ‘sitting tight’ with your practice or abandoning it: one can sit loosely with it, or at any rate one can do so in the case of religiously based MPs. It is not practically rational to carry on with business as usual under the DAM [disagreement, ambiguity and malfunctioning] conditions (McKim 2001: 252).

So, even allowing for the autonomy and irreducibility of doxastic practices, and that CMP is a socially established way of forming beliefs, the admission of several restrictions in its mechanisms implies a reduction in the justification for its outputs to a lower grade than the full-blooded epistemic justification postulated by Alston.

Now, if the *prima facie* justification provided by CMP is a matter of degree, then there is no problem, in principle, in putting this degree in a probability figure. As we saw, according to Alston, CMP serves to render its participants *prima facie* justified in believing that God exists, or, in Bayesian terms, it provides grounds for ascribing a considerable probability to theism prior to apologetic debates with non-participants. However, in the reading of Alston’s proposal adopted in this chapter, this justification is restricted to the participants in this particular doxastic practice, and does not provide an objective and universal standpoint from which to attribute a probability. Moreover, if McKim’s observations are correct, the degree of justification is not very high (given the ambiguity and

disagreement involved in mystical perception), although not very small either (since it is a socially established doxastic practice with a considerable degree of self-support) in the context of the debate with secular believers on the justification of theism. In any case, CMP may permit its participants to ascribe a prior probability whose value will be considerably higher than that which Swinburne's principle of simplicity allows.

Still, the particularism of CMP prevents us from using religious experience as a means of attributing a prior probability to theism if we adopt Swinburne's approach to Bayesianism, since for Swinburne we need universal, neutral and impersonal criteria for ascribing priors, like the principle of simplicity. However, if my arguments in Chapter 3 are correct, there is good reason not to accept Swinburne's simplicity principle as this objective criterion for attributing an initial probability to the hypothesis that God exists. Indeed, in the next chapter I will discuss some reasons not to accept the whole theory of probability that is behind Swinburne's suggestion of that principle as a guide to the ascription of priors. In light of an alternative theory of probability to Swinburne's, I will propose another way of using religious experience in the justification of theism in a Bayesian way. In so doing Alston's ideas will prove very helpful.

In conclusion, according to my interpretation, Alston's epistemology of mystical perception protects his approach from the attacks which undermine Swinburne's appeal to religious experience. Instead of employing religious experience in an inductive argument for theism as Swinburne does, Alston is happy with making an 'equal entitlement claim'. For him, given a particular conceptual background the way we form beliefs from religious experience may entitle theists to form the belief that there is a God. On the other hand, this higher immunity to criticism has the price of preventing him from providing an objective and universally efficient argument for theism from religious experience. Even so, the doxastic practice approach may be able to grant to theists some initial probability that theism is true.

Religious experience can then assume a role in a Bayesian approach to the justification of theism that is very different from the one attributed to it by Swinburne, an idea that will be developed in the final chapter.

Chapter 7 - Swinburne and the Intersubjective Theory of Probability

The object of the present chapter is the search for an alternative to Swinburne's theory of probability. Based on an alternative theory of Bayesian probability I intend to incorporate the phenomenon of religious experience in the estimate of the prior probability of theism. In the first section of this chapter, I will present Swinburne's account of the logical theory of Bayesian probability, which he advocates. Then I will introduce the subjective theory of Bayesian probability, which directs strong criticisms against the logical theory. In the third section, I will analyse some limits of subjective Bayesianism and some of Swinburne's counter-attacks to the subjective theory. In the final section of the present chapter, I will then present the inter-subjective theory of probability as a good alternative to the two above. By using the inter-subjective theory I can explain how to employ religious experience in relation to Bayes's theorem in the next and final chapter of this thesis.

1. Swinburne and the Logical Theory of Probability

Probability is commonly said to be 'Janus-faced', that is, like the Roman mythological figure, it has two faces, one turned to objects and events, and another one to beliefs and hypotheses¹. Generally speaking then, probability is a proportion, the measure of a degree that can be applied on the one hand to objects and events, and on the other hand to beliefs and hypotheses. A degree of probability expresses the status of a belief or state of affairs in a range that goes from zero, which indicates impossibility or falsity, to one, which denotes certainty, necessity or truth. The emphasis on one of the 'faces' – either the epistemological

¹ On this, see Gillies (2000: 18).

or the physical – and the way the degree is described is what defines a particular theory of probability.

Historically, we can distinguish four major theories of probability², which are commonly called the logical theory, the subjective theory, the frequency theory and the propensity theory. While the first two admit the idea of probability of hypotheses, both the frequency theory and the propensity theories usually claim that we can only apply the concept of probability objectively and scientifically to events or classes of objects³. As we will deal with the logical and the subjective theories more extensively in this chapter, let us make a brief mention here of the other two. The frequency theory was proposed in what is considered its canonical form by Richard Von Mises, one of the most important associates of the Vienna Circle. In this theory, probability deals only with sets of repetitive events and collections of objects, which are defined by a particular attribute that occurs in each of the elements of the set in varied degrees. In Von Mises' formulation, the defining attributes of the sets and the respective degrees (frequencies) of them in each individual are data to be obtained empirically, from observation.

Despite being initially a proponent of the frequency theory, Karl Popper concluded later on that this was not a satisfactory account of objective probability, since it was not capable of providing probability values for single occurrences, given its exclusive focus on classes of repeatable events. So, using Von Mises' theory we are capable of stating what is the probability of a given attribute occurring in a class of individuals (say the proportion of Oxford professors who attend a religious service on Sundays), but not of a single event or individual (say the probability of Professor Swinburne attending a religious service next Sunday). As we will see in section two of this chapter, the attribution of probability values to

² In this brief description, I am very much indebted to Gillies (2000).

³ An important exception to this position is Reichenbach, who applied the frequency theory to the probability of hypotheses (see Reichenbach 1949).

single objects and non-repeatable events is easily solved by the subjective theory, which Popper strongly rejected given his strict objectivist conception of science. Popper suggested then the propensity theory of probability according to which we quantify the degree to which some generating conditions have the disposition to produce the observed frequencies, where both the theoretical terms ‘conditions’ and ‘dispositions’ are defined non-empirically. So we can have an objective probability of the conditions for something to happen even if these conditions are not repeated a large number of times. Single cases would be dealt with by the quantification of the propensity with which a particular result occurs given a certain set of conditions. However, according to Gillies, even if the propensity theory fails to deal with probabilities in a strict objectivist way, it was important for providing a non-positivist concept of objective probability, since it does not require that the theoretical terms involved in the probability assessment be given by observation (see Gillies 2000: 125).

1.1 The logical theory and Swinburne’s correct criteria of induction

Sensible to the appeals of the frequency and propensity theories, Swinburne develops a sort of pluralistic interpretation of probability. According to Swinburne, there are three kinds of probability. The first type is physical probability, which is ‘[...] a measure of the extent to which some particular outcome is predetermined by its causes at some earlier time’ (Swinburne 2001a: 56-7). So, the degree of probability of an event indicates the bias in nature predisposing it to happen following physical causes. As a result, we say that an event has physical probability 1 if it is ‘physically necessary’ rather than ‘certain’, since the notion here is not referring to a belief but to an object or phenomenon. In addition, observes Swinburne, ‘physical probability is relative to time – as the time at which the event is predicted to happen or not to happen draws near, so (if that probability is not 1 or 0) the probability of its occurrence may change’ (Swinburne 2001a: 57). In other words, with the

exception of events that are either necessary or impossible, which means they will either happen or not happen come what may, the physical probability of an object can vary depending on the relative proximity of the causal event that will trigger the occurrence of that object as an effect.

The second type of probability discussed by Swinburne is statistical probability, which is, according to him, '[...] a proportion of events, either in an actual or in a hypothetical class, that is a class generatable by a repeatable process' (Swinburne 2001a: 57). Within this type of probability we should distinguish between 'actual statistical probability', which denotes a proportion in a finite class, and 'hypothetical statistical probability', which concerns the proportion in infinite sets. In other words, instead of causal relations, statistical probabilities refer to relative frequencies, whose propositions typically have a form like 'the probability of an A being B is p '. The indefinite article of the statistical probability form indicates another important difference between physical and statistical probabilities, since in the latter the main reference is not to any particular individual in class A, but to the class as a whole (see Swinburne 1973: 12). Another important relationship between physical and statistical probabilities is that 'Statistical probability is concerned with what actually happens, or would happen under certain circumstances. Physical probability is concerned with what is inclined to happen, and so – in extreme cases – with what has to happen. The one entails deductively very little about the other' (Swinburne 2001a: 60). In other words, what is physically improbable can keep happening *ad infinitum* leading to different measures of statistical and physical probability for the same kind of phenomenon.

The real interest of Swinburne, however, is in what he calls 'inductive probability'. It is the concept of inductive probability that covers the relationship between hypothesis and evidence, which is central to his Bayesian approach to the justification of theism. 'Inductive probability', Swinburne holds, 'is a measure of the extent to which one proposition r makes

another one q likely to be true (r and q may be complicated conjunctions or disjunctions of other propositions)’ (Swinburne 2001a: 62). In this third type of probability we have a relationship between two propositions, as in the other two kinds, but in contrast with them, inductive probability is about the relationship between the two propositions, that is, it is concerned with to what extent one proposition provides reason for believing another.

For Swinburne, another important difference between inductive probability and the other two sorts is that inductive probability does not normally have an exact numerical value. In the terms used in *An Introduction to Confirmation Theory*, we could say that inductive probability propositions are generally only either classificatory or comparative, but not quantitative⁴. Classificatory propositions have the form ‘evidence e renders probable hypothesis h ’. Comparative propositions have the form ‘evidence e renders hypothesis h more probable than evidence e_1 renders probable hypothesis h_1 ’. And quantitative propositions read as in ‘the probability of h given evidence e is p , where p is some definite number between 0 and 1 (see Swinburne 1973: 2).

Further, in contrast to statistical and physical probability, inductive probability is in essence not an empirical matter and cannot be settled by observation of any kind. Inductive probability concerns the relation involved in a proposition being grounds for believing another one, which is an *a priori*, non-temporal issue. It refers then only to the contents of the relevant propositions, being independent of any further empirical considerations about the objects referred to in the propositions. In Swinburne’s words, ‘If I assess the evidence available to me now properly and conclude that on that evidence the probability of Jones having voted Republican at the last election is such and such, subsequent discoveries (including discovery for certain whether or not Jones voted Republican) cannot affect the

⁴ As can be seen from the arguments presented in Chapter 4.3 (p.128), this restriction is unnecessary in general Bayesian terms, although it is required by Swinburne’s approach as we will see later on.

value of that probability, cannot show that I was mistaken in my judgement of it' (Swinburne 1973: 12). The reason for this inalterability is that inductive probability is about how much the evidence *e* we consider supports our belief in a hypothesis *h*, i.e. it is about the relation of evidence to hypothesis, not about the probability of the events described in *e* having occurred (statistical probability) or even about the causes involved in the occurrence of the phenomena reported in *e* (physical probability) (see Swinburne 2001a: 63-4 and 1973: 25-6).

This way of characterising the probability of hypotheses on evidence permits us to classify Swinburne as a proponent of the logical theory of probability. In fact he explicitly states that he is: 'So we have adopted and expounded the logical theory of probability as an account of the meaning of a considerable number of propositions about probability. Such propositions state the extent to which certain evidence renders probable a certain hypothesis' (Swinburne 1973: 28). As Swinburne correctly observes, the logical theory was classically proposed by John M. Keynes (see Swinburne 1973: 24). According to Keynes, probability is a logical relation between hypothesis and evidence, an idea that Swinburne accepts. However, there is an important difference between Swinburne's version of the logical theory and Keynes' version (see Swinburne 2001a: 70, footnote 14), which concerns their respective theories about what makes what probable, a notion that will be clarified in what follows.

It is from the logical relationship that characterises inductive probability that Swinburne extracts the concept of logical probability, which will be crucial to his probabilistic theory. Logical probability is a type of inductive probability in which the inductive support that a proposition *q* gives to a proposition *r* is measured not only by all the relevant logical possibilities and corresponding entailments, but also by the correct inductive criteria. A value that ideally could only be reached by a logically omniscient being, but '[...] to which we try to conform our judgements of inductive probability on evidence but about the value of which we may make mistakes', says Swinburne (2001a: 64). In other words, the

value of a logical probability is totally determined *a priori*, according to the logical relationship between the actual contents of the propositions concerned and the correct inductive criteria known by a logically omniscient being.

So, from the notion that one proposition can make another one probable, included in the concept of inductive probability, we can reach the idea that there are correct criteria to assess the extent to which some evidence gives probability to a hypothesis. The reason for this, in Swinburne's words, is that,

If we do not think that there are such criteria, then we must hold that no one makes any error if he regards any scientific theory compatible with observations and any prediction or retrodiction whatsoever from those observations as probable on the evidence as any other. On the basis of our evidence of what has happened so far, it would be as sensible to believe that cyanide will nourish and bread poison tomorrow, or that if we stand on concrete we shall sink into the ground, as to believe the opposite of these things (Swinburne 2001a: 64).

In Swinburne's hard rationalist programme, the rejection of the notion that there are correct criteria for inductive probability would lead to an irrational relativism in which totally implausible inductive inferences would be regarded as equivalent in value to the clearly more plausible ones. So, if, in science and our ordinary life, beliefs are to have at least a minimum of rationality, we should agree that there are correct criteria of inductive probability, even if we may make mistakes about them and they can in fact only be known in their entirety to a logically omniscient being. In other words, the rationality of scientific enterprise means we need to postulate that there are logical probabilities.

In the field of inductive probability, Swinburne distinguishes the notion of logical probability from two other ways of considering probability on evidence, namely epistemic and subjective probabilities. These two other kinds of inductive probability do not fully respect the basic idea that the probability of hypotheses on evidence is ruled by purely logical factors. In contrast with logical probability, epistemic probabilities do not postulate a logically omniscient being that knows all correct inductive criteria and logical entailments. In epistemic probability, the support given from evidence to hypothesis is measured by the

laws of the probability calculus and the correct criteria of logical probability known to a particular individual or community. The problem with this kind of inductive probability, warns Swinburne, is that the choice among the many possible sorts of epistemic probability is largely arbitrary, that is, there is no reason we should adopt one instead of another (see Swinburne 2001a: 69).

The problem of arbitrariness becomes even more intense with subjective theories of probability. This kind of probability rejects the idea of objectively correct inductive criteria furnished by the probability calculus, stating that this is also a subjective matter. In other words, there is no such a thing as correct inductive criteria; all inductive inference is to be assessed according to patterns considered reasonable to an individual or community of individuals. ‘So’, he concludes, ‘I distinguish from the primary kind of inductive probability – logical probability, the two kinds – epistemic and subjective. The latter are the assessment of logical probability by subjects of varying lack of capacity to apply correct criteria of logical probability, and varying degrees of false belief about what these are’ (Swinburne 2001a: 70-1).

Swinburne clearly favours the first kind of inductive probability, that is, logical probability, according to which the likelihood of a hypothesis on evidence is provided exclusively by the logical relationship between their respective propositional contents and by correct inductive criteria. In the passage cited above (Swinburne 2001a: 70, footnote 14), Swinburne observes that this is one of his major objections to Keynes’s position, since Keynes affirms that the inductive criteria that determine the epistemic probability value are relative to human capacities. As we saw above, for Swinburne, this admission leads to the risk of arbitrariness regarding inductive criteria.

In defending a probability theory that demands the existence of objectively correct inductive criteria, Swinburne needs to state what these criteria are. As we saw in Chapter 1,

he suggests four criteria to assess what makes what probable. Two of them are *a posteriori*, namely the criterion of yielding the data, and the criterion of conforming to background knowledge. The other two are *a priori*, corresponding to the scope of the hypothesis and the principle of simplicity that is the most important *a priori* inductive criterion to him. As we saw, Swinburne dedicates considerable effort to defending the universally applicable and impersonal character of simplicity as an inductive criterion, a position that has very important consequences for the way he analyses the prior probability of the theistic hypothesis.

However, as I stated in Chapter 3, there are serious difficulties in the principle of simplicity, concerning its definition, applicability, justification, and the way it relates to the criterion of background knowledge. Recall that in Chapter 3 I concluded that even if we grant to Swinburne that simplicity has a precise definition, that it can be unambiguously applied in inductive inferences, and that we can justifiably take it as evidence of truth, we could still take it as nothing but part of the background knowledge shared by a community of researchers. I also noted in Chapter 3 some problems regarding the factoring of the simplicity principle into Bayes's theorem. In fact, I argued that the very rationale invoked by Swinburne to ground the principle of simplicity – that we need criteria for selecting the best hypothesis among an infinite set of possibilities – was based on too artificial and implausible a picture of theoretical activity in science.

In any case, it is important to state precisely the nature of Swinburne's Bayesianism so that the alternative to be developed later on becomes clearer. As we saw above, for him, the probability involved in the relationship between evidence and hypothesis is a matter of logical entailment and correct inductive criteria. Swinburne defends the idea that the confirmation of a hypothesis by evidence ($C(h,e)$) is a matter of the probability of h given e ($P(h/e)$) and he suggests that Bayes's theorem depicts all the correct criteria of induction from e to h (see Swinburne 2001a: 103). Specifically, his criteria concentrate on the assessment of

the prior probability attribution. As a result, we can distinguish Swinburne's theory of probability and confirmation as one involving the postulation of universal, *a priori* and impersonal criteria to assign prior probabilities to hypotheses in a Bayesian analysis. For Swinburne, then, we can assign probability values not only to classes of events, repeatable processes and physical propensities, but also to hypotheses in view of evidence. The probability of hypotheses is a logical relationship ruled by correct inductive criteria that fall mainly upon the attribution of prior probabilities in Bayes's theorem. It is here that the main difference lies between Swinburne's concept of probability and the one I will expound next, known as the subjective theory of probability.

2. The Subjective Theory of Probability

The subjective theory of probability was proposed initially by Frank Ramsey and Bruno de Finetti, who arrived at similar conclusions independently. According to this theory, the probability of a hypothesis, event or uncertain quantity *h* is the degree of belief in *h* held by a person. For the subjective theory, then, probability is a degree of belief and is subject-related. For many subjective theorists this provides a concept that comprehends all three kinds of probability suggested by Swinburne. As the subjective Bayesian statistician Lawrence Phillips asserts, 'Probabilities are different from one another only in their values; we do not have one kind of probability for events and another kind for hypotheses; we do not have different kinds of probability for events involving people than for events involving things' (Phillips 1973: 13).

In this way, the subjective theory suggests a much simpler account of probability than that defended by Swinburne. According to de Finetti, the concept of probability defended by his theory is the most adequate to common sense, and the most 'natural' (one of Swinburne's original senses of simplicity), for, as he says,

What do we mean when we say, in ordinary language, that an event is more or less probable? We mean that we would be more or less surprised to learn that it has not happened. We mean that we would feel more or less confidence that it will happen. Probability, in this as yet vague and obscure sense, is constituted by a degree of doubt, of uncertainty, of conviction, which our instinct makes us feel in thinking of a future event, or, anyway, of an event whose outcome we don't know (de Finetti 1989: 174-5).

The probability of a hypothesis h is then defined by the opinion a given individual has about its degree of correctness. This opinion, clearly, may vary from one individual to another, which means that different probabilities can be attributed to the same case. Yet, the relativism that this conception may lead to does not frighten de Finetti, who sees this as an inevitable element in the idea of probability as degree of belief. Indeed, for him, even the idea of 'equal cases' depends on the circumstances known or unknown to the individuals involved (see de Finetti 1989: 178).

In fact, the subjectivists criticise the very notion of 'trials of the same phenomenon' that is so important to the frequency theory, which defends the idea of objective probability. Now, as we saw in section 1, the frequency theory of probability aims to calculate the proportion of occurrences of a certain quality in a given class of individuals or repetitive events, for example, the percentage of British university lecturers who profess a religious belief. In order to reach this figure while dealing with large or non-definite sets, we extrapolate it from the results we obtain from a small sample. The problem in defining a sample from which we extend the frequency of a certain attribute onto a given group of individuals is in managing to define a rule so that the sample is not biased. So, for example, we should avoid concentrating our research about the frequency of religious believers among British university lecturers either in the theology or in sociology departments, since this would probably give us a distorted measure. This proviso seems sensible given it is reasonable to expect a high concentration of religious believers in departments of theology and a smaller number of these in the sociology ones.

Still, one could ask whether the sort of care in handling samples as exemplified above does not include some subjective elements in the frequentist approach that aimed to assess probabilities objectively, regardless of the beliefs held by the researchers. In fact, unless we have reliable statistics regarding the proportion of religious believers in theology and sociology departments, the proviso above, however sensible it may seem, cannot be accepted in an objective determination of unbiased samples.

This difficulty in the frequency theory is related to another problem regarding its purported objectivity, namely, the question of whether there are objective probabilities of single events, a question that, as we saw, motivated Popper to find an alternative to the frequency theory. To state this problem, let us suppose we are searching for the probability of a particular British driver's having a car accident. This probability may alter if we describe this British driver as a male aged 50 plus, a member of a class which is reportedly at a much lesser risk of involvement in a car accident than the British male driver under 30 or even than the average British driver. This being the case, the probability of single events seems to depend more on the way we describe the event – in other words, the way we assign the event to a reference class – than on the event itself. This, however, is not compatible with a concept of probability being totally objective and independent of personal opinion.

The usual way out that frequentists propose for this difficulty is the principle of the narrowest reference class. According to this rule (as stated, for example, by Salmon 1978: 152 and Ayer 1963: 202), we should refer the individual case to the most specific class the event can be classified within objectively. Thus, in our last example, we should opt not for the broad class of British drivers in general, but for male 50 plus British drivers, as long as we have reliable statistics about these two classes of events. Though this principle may work, we unfortunately have no objective reason for following it.

Moreover, as Gillies points out (see Gillies 2000: 121), there may be more than one narrowest reference class in which we can classify the event. For example, suppose we have statistics about both male 50 plus British drivers who wear glasses, and those who drive only at the weekend, and admit that the individual in question fits both categories. It seems inevitable that the choice of reference class to categorise this single case in order to estimate his risk of car accident will have to follow the researcher's preferences, or at least his non-statistical information, since there is more than one way to classify the individual objectively.

However, the frequentist approach to the probability of singular events faces problems even if there is only one reference class with statistical data available and into which the event can be included. As Keynes once observed, the exclusive regard for quantitative evidence may distort our probability estimate, since sometimes we have non-statistical information about the event that, nonetheless, constitutes good reason for refining our assignment (see Gillies 2000: 121). Let us assume the best way to classify our case regarding car accident risk is as male 50 plus British driver who wears glasses, for which we have a reliable statistics related to our issue. Yet, suppose we also know that our driver is a very careful man, who only drives during the day and has had long experience as a professional in this area, and let us say there are no statistics available about this kind of person. In this case, we would be justified in assigning him a probability other than that suggested by the quantitative data. In other words, for the subjectivists, the estimation of single events probabilities ends up being based on subjective assignments. Thus, if these arguments are correct, the frequency theory project of getting rid of subjective elements entirely in probability estimation faces considerable difficulties⁵.

⁵ In his interpretation of the design argument, in which he uses Bayes's theorem in a frequentist way, Wesley Salmon also deals with the reference class problem (see Salmon 1978: 152). His thesis (that analysed from a frequentist point of view, the design argument statistically disproves the existence of God) is criticised by Nancy Cartwright. She points out that the samples he chooses and the assumptions he makes are therefore biased and that his argument ends up begging the question (see Cartwright 1978: 179 and 181). I cannot evaluate the

Yet, it is not only those who reject the concept of epistemic probability that the proponents of the subjective theory criticise. Despite giving probability estimates to hypotheses as well, the logical theory is not spared from critical remarks by the subjectivists. For the subjectivists the main problem with the logicians is that they look for a totally objective account of probability that is not possible. According to de Finetti, for example, ‘What is logical is exact, but it says nothing. Formal logic only teaches us to avoid an intrinsic contradiction among our opinions, in that it allows us to recognise the identity of the same opinion when it is expressed in various forms’ (de Finetti 1989: 214). In other words, the only element we can have from logic regarding probability is the constraint of coherence in the attribution of probabilities, whose parameters are provided by the probability calculus. Apart from obedience to the laws of probability, there is no universally applicable and totally impersonal rule to direct our initial probabilistic estimates.

This means that for the subjectivists, Swinburne’s objective criteria for assessing prior probabilities do not deliver what they promise. In de Finetti’s words, ‘We have shown that to believe in the objective meaning of “a priori” criteria is illusory: they give only subjective probabilities. If one is not happy with this subjective value, but wants to make it objective, one can only think of getting it from “a posteriori” criteria such as the observation of frequencies’ (de Finetti 1989: 182). However, as we saw above, the observation of frequencies will not be able to furnish entirely objective criteria either, since the determination of frequencies also includes subjective elements.

As seen previously, instead of admitting that the initial probability of a theory h is determined by the opinions and the particular standpoint of the individual involved in the evaluation of h , Swinburne proposes that the intrinsic probability of a proposition is governed

weight of her criticisms here, but it is interesting to note that they at least fit in very well with the critical observations made above against the frequentist theory.

by its width or scope, fitness with background knowledge and, mainly, simplicity (see, for example, Swinburne 1973: 132). According to Swinburne, the wider the scope of a hypothesis the lower its prior probability, for the more it says about the world the more it may be mistaken. So ‘all metals dissolve in any acid’ is *a priori* less probable than ‘all iron bars dissolve in hydrochloric acid’ (see Swinburne 1973: 97-8), because when talking about all metals and any acid we are more likely to be mistaken than when we refer to a certain type of metal and a specific acid.

However, if we apply the criterion of scope to predicates instead of to laws, we have the opposite result regarding *a priori* probability, that is, the wider is the predicate Q we ascribe to an object a the higher is the probability that a has the quality Q . Or in Swinburne’s words,

Thus suppose we are considering what will be the colour of a certain house a . Let ‘Q1’ be ‘of any colour except black’, and ‘Q2’ be ‘magenta’. My suggestion is that $Pr(Q1/\alpha)$ is intrinsically more likely to be found in intervals which include high values in the probability continuum, than is $Pr(Q2/\alpha)$ (Swinburne 1973: 132).

Still, one could counter this objection by arguing that the difference in the evaluation of prior probability afforded by these two considerations of width is due to the fact that they refer to different kinds of probability, namely inductive and statistical. Scope produces lower *a priori* prior probability in cases of inductive probability propositions. In the last quotation above, however, Swinburne was dealing with the statistical probability of an object bearing a certain quality, which is higher to the extent that there are more potential instances of the quality. Even so, it is not difficult to think of cases where these two types of probability merge, leading to an indefinite situation regarding the criterion of scope. In fact, Swinburne seems to suggest that the wider the predicate Q we attribute to an object a is, the higher the intrinsic inductive probability of the corresponding hypothesis will tend to be, when he says:

So we have seen that $P(h_i)$ is a hypothesis that $Pr(Q/\alpha)$ lies within some narrow interval, is higher if the interval includes 1 or 0 (...), and is higher by and large for higher intervals in the probability continuum the wider is ‘ Q ’ (Swinburne 1973: 132).

If this interpretation is correct, then the notion of width and its corresponding criterion of scope serves to indicate both low and high prior probability, depending on the circumstances. If the proposition states a hypothesis about an object or event, and if it has a large scope, then it will mean a low prior probability. Yet, if the hypothesis is merely the prediction that a certain individual belongs to a certain class, then the wider the class the more probably true is the hypothesis. Thus, the proposition ‘all animals have digestive organs’ is *a priori* less probable than ‘all pigs have digestive organs’, because the former is more likely to be wrong than the latter given its wider scope. On the other hand, the existential hypothesis ‘*a* is an animal’ is more probable than the thesis that ‘*a* is a pig’ for the attribute of being an animal is wider than the attribute of being a pig. However, how would we evaluate the comparative prior probability of two hypotheses that combine an existential and a universal proposition according to the criterion of scope? For example, how to adjudicate as to the relative probability between ‘all animals have digestive systems and *a* is an animal’ and ‘all pigs have digestive systems and *a* is a pig’? In a situation like that the criterion of scope will provide no clear answer, and the prior probability will need to be ascribed according to the judgement of the scientist.

The difficulties do not lessen when we consider the criterion of simplicity. As I argued in Chapter 3.3 (pp.81f.), given the many facets of the concept of simplicity, the possibility of two rival hypotheses presenting different facets of simplicity is not negligible. Indeed, Swinburne is very aware of this (see Swinburne 1997b: 30) and suggests that the scientific community will be able to deal with these cases when they crop up. But this is an admission that the criterion of simplicity need rely on the scientists’ discretion for its application in many cases. In the last analysis, the promise of delivering a completely objective evaluation of prior probabilities, precluding any influence of personal judgement in

scientific inference and according to totally universal and objective criteria, turns out to be an illusion, as Colin Howson and Peter Urbach, two important contemporary subjectivists, claim regarding non-Bayesian statistical methods:

[T]he ideal of total objectivity is unattainable and ...classical methods, which pose as guardians of that ideal, in fact violate it at every turn; virtually none of those methods can be applied without a generous helping of personal judgement and arbitrary assumption (Howson and Urbach 1993: 12).

As we saw above, subjectivists think that different individuals may reasonably have different degrees of belief in a hypothesis h given the same evidence e . Their concept of rational belief does not require a consensus based on logical laws, but is centred in the notion of coherence, which is at the very heart of their method of establishing the axioms of probability.

According to the subjective theory of probability, the measure of an individual's degree of belief in a proposition h is calculated by the extent to which he is prepared to act on h . Usually, this degree of belief in h is such that it leads to a corresponding action. The action is revealed in a betting situation. So, the strength of my belief that the sun will rise tomorrow can be measured by the rate at which I am prepared to bet on this proposition. This is described by Gillies as a psychological experiment in which a person bets on a certain outcome in a way that his betting measures his degree of belief that the outcome will happen. The bets are in money and the amount should be high enough to force the person to decide his degree of belief carefully (see Gillies 2000:55f).

The rate at which I am prepared to bet on h is my betting quotient, generally represented by the letter q . Given a stake S , the value I have to pay in exchange for S in case h is true is given by the value qS . In the situation proposed, the stake S is placed by someone else and can be positive (corresponding to my bet in favour of h being true) or negative (corresponding to my bet that h is false, that is, to my bet against h). Now, consider a situation in which I do not know of any additional information that could confer an advantage or a disadvantage to any side of the bet and then distort my degree of belief in h , i.e. that I do

not know whether the stake is negative or positive. Given this set-up, we have a “Dutch Book” if my betting quotients are such that they permit my counterpart to choose a set of stakes S that leads me to lose money whatever the outcome is, which is clearly an undesirable situation for me. As a result, I will have a reasonable chance in a betting situation as long as I adopt a quotient that does not allow a Dutch Book to be made against me.

What Ramsey and de Finetti demonstrated was that, in order for a set of betting quotients not to be subjected to a Dutch Book, the set of betting quotients (i.e. the assignment of probabilities) must be coherent, that is, it must satisfy the axioms of probability. In other words, my degree of belief in h taken as my disposition in acting in conformity with h must obey the axioms of probability calculus if I want to avoid a completely undesirable situation, which is losing money whatever happens. This necessity of conforming my degree of belief in a hypothesis h to the axioms of probability to avoid a Dutch Book is called the condition of coherence. From the condition of coherence which emerges from the Dutch Book argument, the Ramsey-de Finetti theorem deduced all the axioms of probability calculus, showing that those axioms are both necessary and sufficient for a degree of belief to be coherent⁶. According to Gillies, this achievement is a strong argument in favour of the subjective theory, since it shows it as at least one of the valid interpretation of the calculus (see Gillies 2000:64).

For the subjectivists, the axioms of probability calculus are not only an argument in favour of the subjective theory, but also a constraint on the assignment of prior probabilities in Bayes’s theorem. For them, as we saw above, there is no universal *a priori* rule to direct the attribution of priors, or, in Swinburne’s terminology, there are no such things as intrinsic probabilities forced upon any rational being. For the subjective theory, each individual may

⁶ For the proof of the Ramsey-de Finetti theorem, see Gillies (2000: 59-64) or Howson and Urbach (1993: 78-84).

assign to a hypothesis h the prior probability he thinks is correct as long as he complies with the axioms of the calculus, that is, as long as he is coherent in his estimate. A rational estimate of probability for a subjectivist is a coherent one, and not one that is guided by alleged universally correct *a priori* criteria of induction.

However, as the critics of the subjective theory correctly point out (see, for example, Swinburne 2001a: 121), the coherence condition is compatible with an enormous range of probability estimations. This is a particularly difficult problem once we bear in mind that the subjective theory offers its conception as an account of scientific procedure (see, for example, de Finetti 1989: 173). Like Swinburne, many subjectivists see confirmation as a probability relation in which Bayes's theorem is crucial in describing how evidence can confirm a hypothesis. Yet if each person may attribute a probability to a certain hypothesis which corresponds to his particular degree of belief in that hypothesis, what happens to the objectivity we expect from scientific reasoning? Bayes's theorem plays a crucial role in the subjectivists' answer to this question.

As I said in Chapter 1.2.1 (p.17), Bayes's theorem follows from the axioms of the probability calculus. From the mathematical point of view then, it is not controversial, and, in Bayesian circles, it is universally recognised as a condition for a coherent probability estimate. In Swinburne's application of Bayes's theorem to the justification of theism, there is an emphasis on one aspect of the kind of result this inferential tool can furnish, namely the final posterior probability we reach after considering the correct prior probability to be assigned to the theistic hypothesis (following his principle of simplicity) and the likelihood calculations (i.e. the probability of each piece of evidence in view of that hypothesis). Still, instead of stressing the establishment of a final posterior probability which should be accepted by any rational being, the subjective theory of probability sees Bayes's theorem as a formula that regulates the way in which beliefs are updated on the receipt of evidence. In

other words, Bayes's theorem is seen by the subjectivists as a way of revising our previous opinion (i.e. our degree of belief prior to evidence) in view of pertinent data. Clearly, this is not a matter of conflicting views on this occasion, but simply one of emphasis, since Swinburne recognises the revising properties of the Bayesian rule while the subjectivists see it as a way of achieving a final posterior probability. The difference in emphasis, however, tells us something about the orientation of their respective theories of probability.

It is in the idea that Bayes's theorem is a device for upgrading degrees of belief that the subjectivists find the answer to the problem of the objectivity of scientific probability estimations in science. In subjectivist terms, the problem could be interpreted as whether there is a betting quotient that is not only coherent and fair to a particular individual, but also objectively fair, i.e. that corresponds to the frequencies or any non-subjective measure of the occurrence of a state of affairs. The answer is given by the principle of Bayesian conditionalisation we saw in Chapter 4.3 (pp.119ff.), according to which, the more data we learn that refers to our hypothesis h (i.e. data that are purportedly explained by our hypothesis) the more our prior probability for h approximates to its consensual or objective value. In this way, through the updating of opinion in the light of evidence, individuals who disagree about the prior probabilities of a given hypothesis and then attribute different values to it will come gradually to a convergence, which means that they will abandon their initial private opinions in favour of one that is more in conformity with evidence.

This point becomes clear with an example formulated by the Bayesian statistician Lawrence Phillips. The situation is of an unscrupulous gambler who, by a lapse of his own, has two coins in his pocket, one fair and one biased which comes down heads about 60% of the time. He wants to play with the biased one, so that he can increase his probability of winning, but he cannot distinguish one coin from the other, which means he initially attributes probability of 0.5 to both the hypotheses (i.e. that he is playing with the biased one

or with the fair one). Suppose there is another player who accuses him of unfairness (based, perhaps, on the way the unscrupulous gambler had previously behaved) and declares he is prepared to bet on a 0.8-0.2 chance that the coin is biased, that is, this player gives a prior probability of 0.8 to the hypothesis that the coin is unfair and 0.2 to it to being fair. In doing so, both contenders are complying with the axioms of probability calculus, since the total sum of their initial estimates is 1.

Recall that Bayes's theorem is composed basically of two elements, namely prior probability and likelihood. In the present example, the prior probabilities are assigned as above. The next step then is to determine likelihoods in order to see how the prior opinions are updated in the light of evidence and whether there is really convergence of belief degree after considering the data. In contrast with their view about prior probability, likelihoods for the subjectivists are constituted from public data, that, although informed by categories that depend on the way the research was set up, do not reflect the personal opinion of any individual, but is the objective or consensual part of the Bayesian inference. Assume then that the players in our example flip the coin ten times in two series of five and produce the following sequence: HHTHHHHHTH, that is, the coin under scrutiny came up heads (H) eight times and tails (T) two times. Now, given that the tosses are independent of each other, in order to find the likelihoods we can apply the second corollary to the third law of probability, according to which $P(A \text{ and } B) = P(A) \times P(B)$. So, we have for the first five throws:

$$P(H \text{ and } H \text{ and } T \text{ and } H \text{ and } H/\text{fair coin}) = 0.5 \times 0.5 \times 0.5 \times 0.5 \times 0.5 = (0.5)^5 = 0.03125$$

$$P(H \text{ and } H \text{ and } T \text{ and } H \text{ and } H/\text{biased coin}) = 0.6 \times 0.6 \times 0.4 \times 0.6 \times 0.6 = (0.6)^4 \times 0.4 = 0.05184$$

Consider these values for one of the forms of Bayes's theorem given in page 18, according to which

$$P(h_i / e) = \frac{P(e / h_i) \times P(h_i)}{\sum P(h_j) \times P(e / h_j)}$$

Then we will have for the gambler's probabilities:

Hypotheses	Priors	Likelihoods	Priors × Likelihoods	Sums (Σ)	Posteriors
Fair	0.5	0.03125	0.015625	0.041545	0.38
Biased	0.5	0.05184	0.02592	0.041545	0.62

And for the other player's:

Hypotheses	Priors	Likelihoods	Priors × Likelihoods	Sums (Σ)	Posteriors
Fair	0.2	0.03125	0.00625	0.047722	0.13
Biased	0.8	0.05184	0.041472	0.047722	0.87

After five tosses, the players' initial disagreement as to whether the coin used was fair fell from 0.3 (to the gambler: 0.5, to the other player: 0.2) to $0.38 - 0.13 = 0.25$, which means a slight convergence of opinions. After the other series of five tosses, however, we have the following results (consider that, according to the conditionalisation rule, the new priors must be equal to the last posteriors):

For the gambler:

Hypotheses	Priors	Likelihoods	Priors x Likelihoods	Sums (Σ)	Posteriors
Fair	0.38	0.03125	0.011875	0.044016	0.27
Biased	0.62	0.05184	0.032141	0.044016	0.73

And for the other player:

Hypotheses	Priors	Likelihoods	Priors x Likelihoods	Sums (Σ)	Posteriors
Fair	0.13	0.03125	0.004062	0.049163	0.08
Biased	0.87	0.05184	0.045101	0.049163	0.92

As a result, their opinions as to whether the coin was fair had to converge a little more after another series of tosses, falling from 0.25 to $0.27 - 0.08 = 0.19$ in a way that was confirming the other player's suspicion that the coin was biased.

The above example illustrates the idea behind de Finetti's convergence theorem (also known as the exchangeability condition), according to which rival subjective opinions tend towards a consensual or objective value as long as evidence comes in, so that they will finally converge to a single value. To use logical terminology, to the subjective theory, prior probabilities are the premises the inference starts from, and which are updated in view of relevant data. If the starting premises are corrected upon the reception of evidence, it does not really matter which premise one commences from, as long as the conditionalisation rule is obeyed. In fact, the revision of our prior probability in accordance with Bayes's theorem after obtaining data is a matter of coherence, since this theorem is part of the probability calculus. As Phillips claims,

It is this feature of Bayes' theorem that saves Bayesian statistics from being wholly subjective. Initially subjective opinion is brought into contact with data through the operation of Bayes' theorem, and with enough data differing prior opinions are made to converge. This comes about because the prior opinions become less and less relevant to posterior opinion as more and more data are observed. Prior opinion is swamped out by the data, so that posterior opinion is controlled solely by the data. For a Bayesian, this is the only way in which data can 'speak for themselves' (Phillips 1973: 78).

According to the subjective theory, we do not need any criteria apart from the axioms of probability to attribute prior probabilities and we can be satisfied with this procedure. We can stick to the idea that probabilities are individual degrees of belief, and so, in our confirmation theory, accept the fact that there is an unavoidable subjective element in scientific theorising, without dismissing the notion that scientific reasoning is in the end based on objective grounds.

This claim, however, is not free from criticism. In the next section, I will analyse some of the problems in the subjective theory – particularly some raised by Swinburne – in order to suggest a more adequate account of probability for dealing with the question of theistic belief from a Bayesian point of view.

3. Arguments against Subjective Bayesianism

Criticisms of the subjective theory of probability can be divided into those external to the Bayesian sphere and those internal to it. By criticisms external to the Bayesian field, I mean those coming from theories of scientific reasoning that reject any decisive role for Bayes's formula in the interpretation and critique of scientific method. Since this thesis intends to propose an alternative use of Bayes's theorem and religious experience in the epistemology of theism to the one proposed by Swinburne, the discussion of the limits of Bayesianism as a whole may well seem clearly out of my scope. Moreover, the problem of whether the Bayesian proposal furnishes an adequate account of scientific procedure would deserve a thesis (or many) on its own.

Nevertheless, the discussion of two important difficulties with the Bayesian approach, namely the arbitrariness involving prior probability assignments and the old evidence problem, will prove particularly useful for the construction of my alternative proposal in the final chapter. These criticisms will be important because of the replies given to them by the Bayesian side, which will help me to formulate my own approach in Chapter 8.

However, before discussing the external criticisms to the Bayesian method, I will analyse some remarks directed particularly against the subjective theory of Bayesian probability. Being a thesis devoted to Swinburne's epistemology of theistic belief, I cannot fail to consider his own observations against the subjective approach. Subsequently I will expound a Bayesian theory of probability that attempts to incorporate some of the virtues of subjectivism, but that takes into account the main criticisms against the subjective theory.

3.1 Some of Swinburne's criticisms of subjectivism

By far the most common criticism of the subjective theory in confirmation theory is that it is incompatible with the ideal of objectivity in science. This sort of accusation seems

particularly fitted to de Finetti's account of subjectivism in which the only criterion for attributing prior probabilities is coherence. According to Maria Carla Galavotti, this position amounts to a pragmatist and anti-realist conception of probability (see Galavotti 1989: 239 and 242). In other words, since the only restriction upon prior probabilities is compliance with the probability axioms, and since this can potentially be done in an infinite number of ways, and since prior probability is a matter of an individual scientist's opinion, then this prior can hardly be an objective indication of what the world is like. In this sense, de Finetti's probability is fundamentally an instrument for reasoning and behaving in situations of uncertainty. It is a degree of personal belief that is guided by a prudential requirement given by the Dutch Book argument, not an objective measure of truth.

Indeed it is to the difficulties of subjectivism in accounting for scientific reasoning that Swinburne directs most of his criticisms of the subjective theory. In contrast to *An Introduction to Confirmation Theory* (1973), where the subjective theory is dismissed rather quickly, Swinburne offers a much more careful analysis of subjectivism in *Epistemic Justification* (2001). As in (1973), he holds that the subjective theory of probability is not able to provide an adequate account of scientific induction, since the appeal to individual degrees of belief may lead us to all kinds of conclusions on the basis of the evidence available (see Swinburne 1973: 24). If the only criterion we have for assigning a probability value is what we believe to be true, then in fact there will be no way to tell when our inductive inference reaches a wrong conclusion. If we follow the subjective theory then anything goes, for there will be neither true nor false probability judgements, but only consistent or inconsistent ones. Swinburne claims, however, 'surely no one really believes that any way of extrapolating data and reaching predictions about the future is as likely to give true results as any other' (Swinburne 2001a: 69). As we saw in the first section of this chapter, he believes that there are correct criteria of inductive probability, which almost all

accept as providing correct guides about what makes what probable. In mixing up the correct inductive patterns provided by the axioms of probability calculus and the subject's own criteria, the subjective theory incurs the sin of arbitrariness (see Swinburne 2001a: 70).

Even if we refuse Swinburne's idea that the axioms of probability calculus should be adopted because they capture our ordinary *a priori* criteria of what is evidence for what (see Swinburne 2001a: 119), it is difficult to deny the importance of *a priori* considerations in this matter. In spite of the problems with Swinburne's principle of simplicity, he really appears to have a point when he affirms that the assignment of prior probabilities requires the postulation of *a priori* grounds. This is so because resorting to contingent evidence has to stop when all empirical information has already been included, and yet it may be the case that we still have many rival hypotheses to choose from. In this kind of situation, the different hypotheses '[...] can be determined only on a priori grounds (by considerations of simplicity and scope). There must be intrinsic probabilities if there are to be any prior probabilities, and only if there are prior probabilities can there be posterior probabilities of initial conditions' (Swinburne 2001a: 115).

As I will claim in the final section of this chapter, the fact that we accept the need for additional constraints to the axioms of probability for the ascription of priors does not mean we have to embrace a theory of probability of the sort postulated by Swinburne. In particular, we may adopt the idea that science is a rational enterprise without postulating any criteria whose character and applicability are universal and independent of the values and concepts shared by a given scientific community. The additional criteria for correct evaluations of what makes what probable may have their roots in the inter-subjective agreement of the researchers' community instead of being universally applicable standards known to a logically omniscient being.

However, before developing the notion of inter-subjective probability, let us discuss another criticism of the subjective theory, whose consequences will be relevant to my proposal for using Bayes's theorem in the epistemology of theism.

3.2 The limits of convergence theorems

As we saw in section 2, the main subjectivist reply to the charge of it being untrue to scientific objectivity was the idea that prior probabilities do not really matter, for they are washed out by likelihood calculations after we take account of the evidence. As a result, initially divergent priors become more and more convergent, leading to an eventual consensus on the posterior probabilities of the rival hypotheses. Consequently, the subjectivists claim, we need not worry about any *a priori* criteria for adjusting prior probabilities, since the implausible ones will be necessarily discharged as we learn from evidence. Taking Swinburne's illustration, for example (see Swinburne 2001a: 64), those who ascribe a high prior to the hypothesis that cyanide will nourish tomorrow given past records and very awkward and idiosyncratic inductive criteria would see their prior reduced to zero very quickly (and possibly with some unpleasant consequences) after taking into consideration new pieces of evidence relevant to the subject.

Yet, for the convergence theorems to work, they must be governed by objective and stringent criteria. And there are real doubts about whether such criteria are available to the subjective theorist. Initially, as Swinburne notices, the traditional Dutch book arguments by which subjectivism justifies the only constraint on the assignment of priors – the probability axioms – do not justify the use of the rule of conditionalisation that is crucial for the operation of convergence theorems. In his words:

The Dutch-book style arguments that justify subjective Bayesianism, however, require only that my allocation of probabilities at a given time should conform to the calculus; they do not prohibit my changing my allocations entirely at some subsequent time in accord with a rule not determined in advance. So why should I not refuse to learn from

experience ...so long as my allocations of probability at the later time conjointly conform to the calculus? (Swinburne 2001a: 247).

In fact, subjectivists like Howson & Urbach recognise that there is no unconditional justification for the Bayesian conditionalisation principle, that is, there is nothing in the subjective theory that obliges me to take new evidence into consideration if I do not want to do so. Once I submit my previous belief to change through new evidence, I have to update my prior probability otherwise I will be victim of a Dutch book (see Howson & Urbach 1993: 103-4). Yet, one could argue that not only is the disposition of learning from new evidence part of the scientific ethos, which is something subjectivism fails to take into account, but also that without this objective obligation the conditionalisation rule could not play its role in the convergence theorems. In other words, there will be no convergence to certainty if there is nothing that makes the contenders re-evaluate their previous positions in light of additional evidence.

Still, the problems posed by convergence theorems to subjectivism are not restricted to its failure to justify the willingness to learn from experience. According to Mary Hesse, they can only lead to a total consensus under very specific conditions. Firstly, all hypotheses to be confirmed must have a finite initial probability, since extreme values (1 and 0) will not give the expected convergence results (see Hesse 1975: 74). Yet, one of the contenders may well assign one of these values if they are constrained only by their individual degrees of belief. In addition, the application of results from chance games like coin-tossing and dice-throwing does not always apply in scientific contexts, since the analogy between betting situations and theory assessment in science is very weak (see Hesse 1975: 58). In fact, the application of convergence theorems to scientific theory choice requires two statistical conditions that do not make much sense in normal scientific contexts. First, convergence theorems make what is called the randomness assumption, according to which, 'given a

particular hypothesis h_s , the probability of making the test which yields e_i is independent of the particular order in which it and other evidence is observed' (Hesse 1975: 77). However, what distinguishes most scientific activity from statistics is that the former requires structured experiments, deliberately designed to test a hypothesis in a precise order. As a result, the randomness assumption demanded for convergence theorems to work can only be applied to scientific inferences about matters that involve random sampling – as we have in social sciences surveys for example – which rules out much of interesting scientific theory choice. Second, convergence theorems require that the pieces of evidence involved be independent, that is, the outcome of evidence e_1 should not interfere in the probability of evidence e_2 , or in symbolic terms $P(e_1, e_2/h) = P(e_1/h) \times P(e_2/h)$ ⁷. However, this assumption is not always valid in scientific contexts either. As Hesse asserts, 'rather than conducting a large number of independent tests of the same hypothesis, scientific hypotheses are often themselves modified in the light of evidence, and new tests devised for the new hypothesis, with the new results of previous evidence assumed' (Hesse 1975: 78). Thus, the convergence theorems, which are plainly applicable to chance games contexts, seem quite restricted as devices for conferring objectivity to probabilities previously assigned in subjective terms only.

John Earman is even more of a sceptic than Hesse with regard to the power of convergence theorems to account for the objectivity of theoretical activity in science. His scepticism is largely due to the problem of underdetermination of theory by evidence. Broadly speaking this problem states that evidence is ultimately impotent to guide the choice between rival hypotheses since the same set of data can be explained by different and incompatible theories, for, as has been argued since Hume, no finite number of evidential statements can demonstrate a universal statement. In other words, the same body of evidence

⁷ See a similar point in Gillies (2000: 77).

can be said to confirm totally different and incompatible hypotheses. This problem is not new to this thesis since I mentioned it when I presented Swinburne's discussion of the curve-fitting problem (see Chapter 3, p.63). Once many rival irreconcilable theories, that make for totally different curves can all account for the same data represented as points in a graph, the choice among these theories cannot be settled on *a posteriori* terms only, that is, in terms of evidence. The solution suggested by Swinburne is that we need impersonal, *a priori*, and universal criteria for assessing the hypotheses one against the other so that the choice can be rationally oriented. Earman, however, despairs of Swinburne-type solutions since they are not workable, and if they were, they would not be sufficient to explain scientific objectivity given their controversial and artificial character (see Earman 1992: 139-40). In addition, Earman sees the underdetermination problem as destroying the hopes of subjective Bayesianism along with those of convergence theorems.

The problem of underdetermination requires that convergence theorems presuppose some form of consensus in the scientific community in order for them to account for scientific objectivity. For example, it requires an agreement among all individuals involved concerning the model that serves to establish the form of the likelihood calculations and their relative weighting functions (see Earman 1992: 148). In other words, in order to achieve the results expected by subjective Bayesians, the scientists assessing a set of rival hypotheses have to agree about the parameters that will guide the degree by which evidence *e* is made probable by a certain hypothesis *h* in $P(e/h)$. Given this substantive assumption, the theorems postulate that in the long run the different priors will converge to certainty. The problem, however, is that the assumptions cannot be granted unless we abandon a strict subjectivist framework. Further, we may never have enough time to reach convergence of opinion, or as Keynes said in another context, 'in the long run we are all dead' (see Earman 1992: 148). Worse than that, however, is the fact that 'scientists often agree that a particular theory is

better supported by one experimental finding than another (...). What happens in the long or the short run when additional pieces of evidence are added is irrelevant to the explanation of shared judgements about the evidential value of present evidence' (Earman 1992: 149). In other words, given the dynamism and speed of scientific research, the convergence theorem results in confirmation theory produce a very imprecise account of what happens in theory choice in science.

In addition, as John Vickers well observes, if subjectivism wants to be a respectable account of scientific reasoning, then it needs to account for the relationship between probability and truth (see Vickers 1989:398). Vickers mentions two main options for Bayesianism at this point. First, we can reduce the subject of believing to an idealised figure, like Swinburne's logically omniscient being, in which the relationship between truth and probability is given by *a priori*, impersonal and universal inductive laws and by the knowledge of all logical relations involved in a probability proposition. Second, there is the alternative of conceiving probability not as an ideal individual's degree of belief but as the degree of belief of a selected group, for example, the scientific community, which would be taken as the source of the criteria for any probability assignment to be considered 'correct'. For Vickers, therefore, the notion of probability as the subjective opinion assumed by an individual is unacceptable as it stands and needs a reformulation on one of the above lines.

In other words, convergence theorems are not very helpful to subjectivism as an account of scientific inference, unless it is submitted to a reformulation regarding the way probability is related to truth.

3.3 Deborah Mayo and the rejection of Bayesianism

Deborah Mayo is another author who rejects the idea that a purely subjective estimate of prior probability has any bearing upon scientific reasoning. In contrast with Vickers,

however, she does not see any prospect of granting prior probabilities an important place in the account of scientific theoretical activity. According to Mayo, Bayesianism is not an adequate account of scientific reasoning since it is at odds with real practice. One of the main reasons for this is that the Bayesian statistical methods of analysis are very little used in real experimental science. Moreover, scientists keep on using experimental methods and statistical tools that the Bayesians are very keen to criticise (see Mayo 1996: 71). In addition to that empirical issue, Mayo holds that the Bayesian approach fails to provide the ampliative rules needed to understand the inductive process in scientific contexts. Bayesians also find it hard to comply with the objectivity expected from scientific reasoning. Once again, the need for prior probability assignments is at the root of this failure to account for scientific objectivity.

As I observed earlier, given the purposes of this thesis, I do not intend to stand in the crossfire between Bayesians and anti-Bayesians. So, Mayo's criticisms will serve me as long as they permit me to reveal the problems of both the logical and the subjective theories of Bayesian probability so that I can formulate an alternative to them in the last section of this chapter. Bearing this proviso in mind, what we have, according to Mayo, is that the problem with the logical Bayesian project is that it could not deliver what it promised. In other words, it failed to show that the degree of confirmation that evidence e affords to a hypothesis h is a formal, impersonal, *a priori* matter. Particularly referring to Carnap's attempt to assign priors by deducing them from the logical structure of a particular first order language, Mayo observes three main failures in that account. Firstly, the formal languages proposed by Carnap were too restricted to account for scientific inferences. Secondly, given the restrictive and purely *a priori* character of his chosen syntactical system, the assigned prior probabilities were hardly logically relevant to any empirical hypothesis. Thirdly, in order to justify the option for the axioms and postulates to be used in his logically driven assignment of priors,

Carnap had to resort to a claim for the intuitive character of the constitutive elements of his system (see Mayo 1996: 73).

The reasons for Carnap's failure in assigning prior probabilities in purely logical terms can apply to some extent to Swinburne's attempt as well. A crucial difference is that Swinburne does not propose a formal semantic and logical system from which to define principles and theorems of inductive logic which are purely analytic (see Carnap 1950: v). In fact, as we saw in Chapter 3, Swinburne gives to his principle of simplicity, his main criterion for assigning prior probabilities, a synthetic *a priori* and even an ontological character, assuming that the principle expresses a structural fact about the world, namely that it is fundamentally simple (see, for example, Swinburne 2001a: 96). This difference, however, does not seem to count in favour of Swinburne, since Carnap's intention in constructing his probability system in analytic terms was to keep the confirmation relationship between hypothesis and evidence strictly in the logical field. In appealing to synthetic *a priori* principles, Swinburne leaves himself more exposed to the charge of being unfaithful to the ideal of a logical theory of probability at all. In addition, his claim that the principle of simplicity is intuitive and accepted by all rational persons (see Swinburne 2001a: 155) suffers from the same dubious efficacy as Carnap's justification.

Given all these problems in the logical theory, Mayo quickly dismisses its attempt to justify prior probability assignments in objective terms and concentrates her criticisms on the subjective approach⁸. As we saw, the subjective Bayesians relinquish any hope of assigning prior probabilities in a neutral logical way, estimating their values by reference to personal degrees of belief while respecting the condition of coherence stated by the probability axioms. It does not matter whether these prior opinions vary from person to person or from

⁸ For a comparison between the types of probability involved in Carnap's and de Finetti's programmes, see Constantini (1989).

moment to moment, but only that they cohere with the individual's beliefs posterior to the data according to Bayes's theorem (either through conditionalisation or by changing the prior assignment).

However, Mayo holds, there are good reasons to question whether scientists' prior beliefs in the hypotheses they are investigating should figure so centrally in the philosophical account of scientific learning from data. Against the subjective account there is the common view that 'in science, it seems, we want to know what the data are saying quite apart from the opinions we start out with' (Mayo 1996: 76). Except for the cases where prior probabilities are assigned in a frequentist way, and as long as logical probabilities will not do, we need to ascribe the priors in a subjectivist manner. However, Mayo claims, 'knowledge of the world, many think, is best promoted by *excluding* so far as possible personal opinions, preferences and biases' (Mayo 1996: 82). As a result, for her, Bayesianism does not provide a good account of scientific reasoning. Not only is it at odds with real scientific practice, but it also depends on the problematic notion of prior probability. In sum, if subjective Bayesianism, which is at least coherent, fails, logical Bayesianism fares even worse.

Now, as I said, I do not intend to defend Bayesianism as the correct description of scientific practice, since that claim is not important to my proposal. However, there are good reasons to take Bayesianism as an illuminating formal account of inductive reasoning that can help us in the problem of the justification of theism.

3.4 Bayesianism as an account of induction

As we saw previously, there are two main components in a Bayesian inference: likelihood calculations, which are the objective part of the process since it is where evidence comes in; and prior probabilities. Some of the most important criticisms of Bayesianism in general and in particular of its subjective version refer to the role and assignment of prior

probabilities. Priors are the starting point of the inductive process and are defined by an individual's degree of belief – in the subjective view – or by some strict logical relations, according to logicians like Swinburne. In fact, most authors today refer to the Bayesian approach as containing a subjective account of prior probabilities, given the enormous difficulties in establishing priors on logical terms only⁹.

According to Bruno de Finetti, the assignment of prior probabilities is a prerequisite for any inductive inference carried out in a rational way. In other words, if, following Hume, we take induction as a type of reasoning from past experiences to expectations about the future, then one of the main assumptions of this process is that the future will resemble the past in a regular way. All this then involves dealing with beliefs in the form of expectations, assumptions and hypotheses. Clearly our expectations may prove false, that is, the future event may not bear out the assumption that the future will be like the past. So for an account of this process to adequately express the character of scientific reasoning, it should not only reflect the main components involved in scientific inference, but it should also furnish instruments for correcting the initial expectations and assumptions that guided our observations.

The Bayesian approach takes induction as the confirmation of a hypothesis by evidence under the terms of Bayes's theorem. This means, de Finetti claims, that 'all the assumptions are expressed, in a sense, as an assignment of initial probabilities, to be changed into the final probabilities after the observations are taken into account...' (de Finetti 1969: 3). In other words, the Bayesian approach is capable of describing induction as a dynamic doxastic process, respecting the central part beliefs play in it, and providing a way of correcting our beliefs according to the observations we make. On these grounds, the concept

⁹ Another reason for treating only the subjective version under the heading of Bayesianism is that it is commonly viewed as by far the most accepted approach in this particular theory of probability (see, for example, Vickers 1989: 397).

of prior probabilities is an inevitable part of a rational account of inductive inference, since it describes our starting point in this process of theorising about the future based on past experiences.

According to Irving J. Good, the inevitability of considering prior probabilities in the interpretation of inductive inference means that we had better take them into consideration explicitly, because otherwise they will just be swept under the carpet. Good advances a very common response to the critics of subjective elements in Bayesian epistemology, namely that the subjective elements they suppress by eliminating prior probabilities return in other points of their account. As we saw in section 2, subjectivists argue that personal judgement in assessing probabilities and evaluating theories is part of the inductive process whether we like it or not. So, for example, while every event in real life is totally unique, in order to deal with events in induction we categorise them in terms of properties that characterise samples. Now, the sample under which a frequency groups the individual occurrences involves moves based on personal judgement. Even in the likelihood calculations, the least disputable part of a probabilistic inference, we have the influence of subjective elements, for, as Good says,

There is no dispute about the numerical values of likelihoods if your basic parametric model is accepted. Of course you usually have to use subjective judgement in laying down your parametric model. Now the hidebound objectivist tends to hide that fact... the bad subjectivists are the people with bad or dishonest judgement and also the people who do not make their assumptions clear when communicating with other people. But, on the other hand, there are no good 100% (hidebound) objectivists; they are all bad (laughter) because they sweep their judgements UTC [under the carpet] (Good 1976: 143).

The problem with the critics of personal estimates of prior probabilities then is that they speak as if we could eliminate any trace of judgement in inductive inference. According to Good, Bayesianism has the virtue of respecting the judging element that inevitably occurs in the assessment of all theory while also providing a means of checking and correcting personal judgement, in order to increase its objectivity and coherence. So Bayes's theorem represents this tool for perfecting and updating our assumptions and initial beliefs in view of observation

and arguments, and prior probabilities reflect the unavoidable role that personal judgement has in inductive inferences.

A critic of subjective Bayesianism could well concede the point about the importance of stating prior probabilities in an adequate account of rational induction, but he could still question why this should be left to the arbitrariness of the individual's decision. What Swinburne proposes with his criteria for theory choice is precisely to eliminate any element of subjectivity from the assignment of priors by reducing this operation to a logical process. If my arguments above are correct, however, he does not succeed in some important respects. Yet, this does not mean there is no way of preserving the notion of prior probabilities or of increasing its objectivity save by resorting to Swinburne's option. Before we discuss an alternative proposal for solving the problem of prior probabilities estimates, however, let us elaborate on another problem put by external critics of Bayesianism.

The Bayesian interpretation of induction permits us to see induction not only as a means of predicting the future, but also of explaining the past, that is, of giving a correct account of evidence already known, a form of induction called 'inference to the best explanation'. This property of the Bayesian epistemology, however, is seen by some as the Achilles' heel of this account, since it makes Bayesianism vulnerable to the problem of old evidence.

3.5 The old evidence problem

The problem of old evidence refers to the temporal position of a piece of evidence vis-à-vis the hypothesis under assessment. Our common intuition is that a piece of recalcitrant evidence, which is already known, and which has not yet been provided with a satisfactory explanation, gives a high degree of confirmation to the theory that finally accounts for it. The problem for Bayesianism comes up when we assume that the degree of confirmation of a

hypothesis h given evidence e is measured by the difference between the probability of h in view of e and of h in itself. Symbolically we have: $S(h,e)=P(h/e) - P(h)$, where $S(h,e)$ stands for the support given by e to h . Now, in a situation when an occurrence is an accepted fact for the scientific community, the probability of e is 1. Consequently, in Bayes's theorem, $P(h/e)$ will be equal or less than $P(h)$ (provided that $P(e/h) \leq 1$), and the degree of support of an old evidence e for h ($S(h,e)$) will then be 0 or negative. This result runs counter to the prevalent intuition in the scientific community and in common sense which sees the account of recalcitrant old evidence as sometimes more crucial than the explanation of a new one. An example of this is the confirmation for Einstein's theory of general relativity provided by the explanation of the anomalous advance of the perihelion of Mercury, a phenomenon that had been studied for a long time and was perfectly known to astronomers (see Earman 1992: 119).

Referring to Swinburne's use of the Bayesian approach as a model for scientific reasoning to be used in the justification of theism, Adolf Grünbaum puts the problem the following way:

Yet in the case of old evidence as defined, i.e. facts already known, how can Swinburne *avoid* conceding that the expectedness in the denominator is equal to 1, and argue effectively that it is less than 1? The circumvention of an expectedness equal to 1 is crucial, if there is to be incremental confirmation of h . As noted in Section 5.2, the condition for such confirmation is that the likelihood in the numerator exceeds the expectedness in the denominator. But since no probability value or product of such values can exceed the value 1, this condition for incremental confirmation cannot be met if the expectedness equals 1 (see Grünbaum 2000: 37).

To analyse this problem, let us recall Bayes's theorem once again, using the version most frequently employed by Swinburne:

$$P(h/e.k) = \frac{P(e/h.k) \times P(h/k)}{P(e/k)}$$

What Grünbaum claims is that, since e is already known, $P(e/k)$, that is, the expectedness of e (the probability of its occurrence anyway) will be 1. If so, $P(e/h.k)$ cannot

be higher than $P(e/k)$, since the latter has already the maximum value allowed by the probability calculus. In this case, since the consideration of evidence can only add to the value of prior probability if $P(e/h.k) > P(e/k)$, then all the pieces of evidence considered by Swinburne, which are all classifiable as old evidence, cannot increase the probability of theism one iota, which is a terrible result for a Bayesian programme in the epistemology of theistic belief.

However, as both logicians like Swinburne and subjectivists like Colin Howson and Peter Urbach agree in accepting, we should not attribute value 1 to $P(e/k)$ in a Bayesian calculation, even if e is actually already known. Instead, e should be estimated on the counter-factual supposition that one does not yet know it so that we can measure the difference it makes to the probability of our belief, given the rest of our background knowledge k (whose value is indeed 1). According to Howson & Urbach, assigning value 1 to $P(e/k)$ reveals a misapplication of Bayes's theorem. The probability should be relativised to current knowledge minus e . 'The reason for the restriction', they argue, 'is, of course, that *your current assessment of the support of h by e measures the extent to which, in your opinion, the addition of e to your current stock of knowledge would cause a change in your degree of belief in h* ' (Howson & Urbach 1993: 403). In other words, since e is under question, that is, since we are aiming to explain it, its prior probability $P(e/k)$, which is the measure of its happening without any explanation other than background knowledge, has to be taken to be less than 1. It is because the theories we already know are not sufficient to explain e that the evidence will have a low prior probability in view of it. Consequently, if e is a puzzling fact that demands explanation, its value in a confirmatory context should not be 1, since it has not yet been satisfactorily accounted for.

Even if this argument does not settle the matter entirely¹⁰, these considerations are important in highlighting a property of the Bayesian account of the confirmatory relationship between evidence and hypothesis. The value of $P(e/k)$, i.e. the degree of expectedness of e is given not by how known or old evidence e is, but by how puzzling or uncertain e is given that which has been proposed as explanation of e so far. In this sense, the reformulation of a hypothesis, or a new way of relating hypothesis and evidence, through highlighting an aspect of either h or e not put forward yet, may make a difference in the likelihood calculation.

The theory of probability I will discuss in the last section of the present chapter is designed to preserve the advantages of Bayesianism as an account of induction insofar as it is free from the problems faced by both the logical and the subjective theories. In this ‘third way’ the notion of a common background knowledge that guides prior probability assignments and directs the convergence of opinions through the evaluation of evidence will play a crucial role. Indeed it is an undeniable fact that in modern natural sciences there is a considerable consensus not only concerning a stock of theories about the world but also about what are good ampliative inferences from that stock to new hypotheses regarding new or old pieces of evidence (see Earman 1992: 159). It is on the basis of that stock and according to rules of inductive inference, which are not always clearly captured in symbolic forms, that the scientific community judges when a theory receives an adequate prior probability, what theories deserve to be taken into account, and to what extent a piece of evidence favours one hypothesis in place of another.

I will now examine a theory of probability that gives the notion of background knowledge a special role so that, in the final chapter of this thesis, I can use religious

¹⁰ Is any relevant debate in philosophy settled? See Mayo (1996: 334-5) for a reply to Howson & Urbach, for example.

experience and Bayes's theorem in the justification of theism in a way different from that proposed by Swinburne.

4. The Intersubjective Theory of Probability

As an alternative to the logical and the subjective theories of probability we discussed above, Donald Gillies has proposed what he believes to be a middle way between them both, which he calls the intersubjective theory of probability (see Gillies 1991: 521). As we saw in section 3, the main criticism directed against the subjective interpretation of probability was that degree of belief in a confirmation context is not an entirely subjective matter. As Wesley Salmon once said:

The frightening thing about pure unadulterated personalism is that nothing prevents prior probabilities (and other probabilities as well) from being determined by all sorts of idiosyncratic and objectively irrelevant considerations. A given hypothesis might get an extremely low prior probability because the scientist considering it has a hangover, has had a recent fight with his or her lover, is in passionate disagreement with the politics of the scientist who first advanced the hypothesis, harbors deep prejudices against the ethnic group to which the originator of the hypothesis belongs, etc (Salmon 1998: 559-60).

Against this full subjectivism in probability, Swinburne, for example, argues that most people draw basically the same conclusions from common evidence such as the fact that we all agree that bread nourishes and that cyanide is a poison.

Yet, it does not follow from the considerable convergence of opinion about what may be inferred from some facts that there is only one correct way of going inductively from evidence to hypothesis. Whether we like it or not, no matter of fact can demonstrate a universal statement. According to an intersubjective view of probability, we tend to draw the same conclusions from the same data because we share a common background knowledge that prevents us from taking wild theories to be confirmed by evidence. It is on the basis of their training and experience that scientists acquire a common base of relevant information to guide their plausibility judgements, Salmon claims (see Salmon 1998: 558). However, even

after this preventative filtering, plenty of competing explanations are still open, and people do not act irrationally in making one choice or another within the limits of this set of options. For a while, competing hypotheses may have to live together before disagreement is settled by argument, empirical evidence or anything that trained specialists in the area can bring to bear.

Swinburne is right in postulating that there must be correct inductive criteria for judging the plausibility of a hypothesis and whether it is confirmed by evidence. Still, this does not mean we know clearly what these criteria are, how they work or why they are able to increase the probability of our theories. Even if we cannot reject the idea of correct inductive criteria, it does not necessarily commit us to any explicit attempt to spell them out as in Swinburne's principle of simplicity. The requirement that theory choice should be governed by principles seems better satisfied if such principles are associated with the background knowledge that is shared by a group dedicated to formulating theories about certain matters. Even so, such principles must also allow considerable room for disagreement, given that there is always some degree of underdetermination in inductive matters. In other words, the admission in principle for the need for criteria to assess inductive inferences does not necessarily commit us to any of the available candidates for the post, and does not imply that inductive issues can be conclusively settled.

It is on the basis of the notion of a common background knowledge that Gillies proposes the concept of intersubjective probability, which is postulated as an extension of the notion of subjective probability. The same approach of measuring degree of belief by betting quotients is then applied to social groups so that we can find out to what extent the group as a whole believes a certain proposition p . The Dutch book argument is also applied to groups and as a result we have the following informal definition of the concept of intersubjective probability:

Let β be some social group. Then it is in the interest of β as a whole if its members agree, perhaps as a result of rational discussion, on a common betting quotient rather than each member of the group choosing his or her own betting quotient. If a group does in fact agree on a common betting quotient, we shall call that betting quotient the *intersubjective* or *consensus* probability of the social group. This type of probability can then be contrasted with the *subjective* or *personal* probability of a particular individual (Gillies 1991: 517).

As with subjective probability, the intersubjective concept is based on a view of probability that comes from the Dutch book argument. This type of argument, as we saw above, requires that the degree of belief revealed by betting behaviour be coherent, following the guidelines of the probability calculus. In addition, the ascription of an intersubjective probability requires that the individuals belonging to the group share a common purpose resulting from the members having an interest in acting together and holding the same ideas. Consequently, if the group is not coherent in its common beliefs, that is, if its members do not keep up the common betting quotient they agreed upon initially, the group will inevitably lose money in a betting experiment.

Apart from the existence of a common interest, Gillies suggests that the existence of a flow of information among the members of the group is another important condition for an intersubjective probability (Gillies 1991: 518). This flow of information can be organised in different ways, according to such factors as the size of and power relations within the group. The crucial element is that once there is a group with a common purpose, its members need to share some information that will flow among them so that they can form through discussion and mutual agreement a common degree of belief about the matters related to their shared purpose. This is important because, according to Gillies, the intersubjective probability of the propositions agreed by the group must be connected with the group's common purpose, otherwise the Dutch book argument fails.

Given this theory of probability, Gillies claims that we can account for the probabilities involved in confirmation theory, that is, we can provide rules governing the

degree of support evidence gives to a hypothesis. The intersubjective theory of probability is able to account for the fact that the probabilities ascribed to hypotheses in scientific contexts are neither a matter of individual taste nor of a single rational degree of belief on which all rational human beings should agree. Instead, the high degree of consensus in the scientific community should be interpreted as the expression of intersubjective probabilities, that is, common beliefs shared by a group with the common purpose of putting forward true theories about matters of fact and relations of concepts. It is on the basis of their shared background knowledge that scientists agree as to whether a given hypothesis is confirmed or not by a certain piece of evidence.

Certainly an individual scientist may disagree with some aspects of the established background knowledge. Indeed, according to Gillies, in the application of intersubjective probability to confirmation theory there is room for individual contributions. However, in order to become accepted by the collective and become itself part of the background knowledge, an individual's proposal must be discussed and processed by the group. On the other hand, as a member contributes to the improvement of the set of hypotheses believed by the group and the refinement of their degree of belief in the theories already accepted, the individual will always owe a great deal to the other members' contributions. In fact, the set of propositions accepted by the scientific community at a certain time will always be more extensive than the knowledge possessed by an individual scientist, and will constitute the basis on which each member proposes a contribution. It is that basis which will furnish the inductive criteria for evaluating a new theory, for determining the relevant theories to take into account in a theory choice problem and for choosing the pertinent pieces of evidence to take into consideration.

The intersubjective theory of probability can account not only for the occurrence of dissidents inside the scientific community, but also for the existence of concurrent schools of

thought in this community. These two factors that can break the group consensus are described in different ways by Gillies' theory of probability. 'As for the scientific rebels or dissidents', he says, 'the appropriate interpretation of probability is clearly the subjective one' (Gillies 1991: 529). Given that the intersubjective theory is just an extension of the subjective theory, and since it does not contradict the latter, it may well account for that phenomenon without much difficulty. In fact, rebels and dissidents are important to scientific communities since they may contribute innovations to background knowledge and they may help to reduce dogmatism through their questioning.

As to schools of thought within a single, overarching community, the intersubjective theory of probability interprets inter-subgroup disagreement in terms of Bayes's theorem. While likelihood ($P(e/h.k)$) and expectedness ($(P(e/k))$) can be given a value based on the common background shared by the whole scientific community, the same cannot be said of prior probabilities ($(P(h/k))$). For Gillies, different schools of thought are likely to judge the plausibility of a theory on background knowledge differently (see Gillies 1991: 530). Consequently, Gillies is sceptical as regards the employment of prior probabilities in confirmation theory, for, as he says:

We want, as far as possible, to ensure that our confirmation function is based on intersubjective probabilities which are consensus probabilities of the whole relevant scientific thought collective. In this way we can achieve general agreement in judgement as to how the competing research programmes are progressing. But this means that we should try to confine ourselves to the probabilities like $P(e, h \& k)$ and $P(e, k)$, and try to avoid the prior probabilities of the Bayesians (Gillies 1991: 530).

In other words, the consensus prevailing in natural science is not well accounted for if we take prior probabilities into consideration because they are the locus of disagreement among schools of thought – or 'research programmes' in Lakatos' terminology (see Lakatos 1970) – in terms of Bayes's theorem.

Wesley Salmon shares Gillies' concerns about the consequences of including personal prior probabilities in the confirmation of theories in natural science. However, instead of

suggesting the abandonment of prior probabilities in this kind of account, Salmon holds that the prior probabilities in natural science are ultimately objective probabilities such as frequencies or propensities. However, leaving aside this frequentist position, Salmon maintains that the existence of background knowledge common to the whole community of researchers is capable of putting considerable constraints in the assignments of priors (see Salmon 1998: 578).

According to Salmon, three types of criteria flow from the agreed background knowledge in science for the kind of plausibility judgement involved in the estimation of prior probability values. First, there are pragmatic criteria, which have to do with the circumstances in which a hypothesis is proposed. An example of a pragmatic criterion is the degree of specialisation of the hypothesis proponent, that is, the less specialised or less familiar with the field the scientist is the lower the prior probability of his theory will be, according to this criterion. Second, there are formal criteria which have to do both with the internal consistency of the new hypothesis and the logical relations it has with previously accepted laws and theories. Third, Salmon claims that there are material criteria for guiding the ascription of prior probability values, which refer to the structure and content of the theory being proposed. Among these material criteria, Salmon includes simplicity, which, for him, is not a universal and totally impersonal criterion as Swinburne holds. ‘The most reasonable way to look at simplicity, I think’, Salmon claims, ‘is to regard it as a highly relevant characteristic, but one whose applicability varies from one scientific context to another’ (Salmon 1998: 563), a conception that largely coincides with that defended in Chapter 3 above.

In fact, the *a priori* character of simplicity is not problematic if this means that it is a criterion to be applied before any consideration of empirical evidence, as Salmon also seems to agree, since he classifies it as a plausibility judgement criterion. The crucial point in my

disagreement with Swinburne is the universal and impersonal character of simplicity as he understands this principle. In sum, the judgement about prior probability is made on the basis of a common background knowledge intersubjectively agreed in the scientific community. This is far from being a purely personal matter, but is not totally impersonal either, but shared and learnt intersubjectively. As Salmon claims, ‘the kind of judgement to which I refer is not spooky; it is the kind of judgement that arises on the basis of training and experience’ (Salmon 1998: 563).

So, instead of being the content of what a logically omniscient being knows, the criteria for constraining the assessment of priors may be thought of as part of the information shared by a certain community of inquirers and required of anyone who wants to join this community. Considered in terms of intersubjective probability, the criteria for theory choice proposed by Swinburne can be included in the background knowledge part of Bayes’s theorem, generally symbolised by k . In this way we not only represent more successfully this important criterion in the body of the theorem, but we also avoid the difficult problem of how we get to know the correct inductive criteria that are accessible to a hypothetical logically omniscient being. In addition, in postulating those patterns as entertained by a certain community of believers, we are not saying that they are strictly speaking the correct ones, but only that they are considered by that group to be the best expression of the right ways for assessing probabilities.

The intersubjective account I am proposing can only work if we consider background knowledge in a way that differs from Swinburne’s. As was claimed in Chapter 3.3 (pp.82f.), instead of putting in k only tautologies and empirical knowledge, there is no reason not to include in the concept of background knowledge other elements of rational inquiry and scientific activity such as inductive principles, mathematical knowledge and inductive values. All of them are part of what a member of the scientific community is supposed to know in

order to be considered as such. Such things are neither tautologies nor empirical data, but can clearly be thought of as part of the body of information that defines a certain area or a whole theoretical activity as scientific. An important example in favour of my position is the very introduction of inductive principles used in experimental science, e.g. randomised trials, which have developed historically along with these sciences¹¹. This being the case, I can then say that Swinburne does not give the criterion of background knowledge the role I am postulating for it due to his too restrictive understanding of this concept.

Swinburne rejects the idea of considering simplicity as part of the background knowledge in a criticism he makes of a proposal by Richard Boyd (see Swinburne 2001a:96n). However, the main claim of Boyd that is denied by Swinburne – that evaluative criteria and principles of inference are established from empirical data – is not part of the proposal presented here. I also maintain that there should be *a priori* elements in inductive reasoning, which are not reducible either to tautologies or to empirical information. Yet, their *a priori* character does not preclude them from being part of a body of background knowledge that governs, depending on the context, a particular area of research or the rational theoretical activity in general. I see no reason in principle not to do so. Indeed, among other things, in this way it is possible to account for these elements in Bayes's theorem more explicitly, as part of the background knowledge *k*.

If we take background knowledge so defined as means of providing additional constraints to the estimate of prior probability, some of the conditions for the convergence of prior opinions can be met to a considerable extent. Indeed, the common *k* not only serves to limit the range of prior probability values which can be assigned to a certain hypothesis but also guides the pre-selection of theories worthy of consideration. In this way, two important

¹¹ I am grateful to Donald Gillies, who suggested this example to me.

requirements for the convergence of priors – that the values of initial probabilities are neither extreme nor too disparate, and that there is an agreement on which theories to consider – are met in principle. A similar point could be made concerning the underdetermination problem of hypotheses by evidence. Once there is a common background that is large enough to base the judgement on the extent to which a certain piece of evidence confirms a particular hypothesis, then this difficulty also loses much of its force.

In addition, if the background knowledge intersubjectively recognised by the inquiring community also embodies heuristic values as mentioned above, then there is a way out of the objection posed by Swinburne against Dutch book arguments. In my exposition above, I agreed that Swinburne had a strong argument against the full subjectivists when he observed that they could not use the conditionalisation rule as a basis for updating prior belief on evidence leading to a convergence of opinions because the individual could simply refuse to consider more pieces of evidence. However, the search for more and more facts about the world is a very strong value in scientific circles. Indeed, this is a fundamental element of scientific ethos, i.e. it is something that a true member of this community is supposed to believe in. As a result, the need to apply the conditionalisation rule is justified by an evaluative belief that is an important part of the scientific background knowledge. So, although the subjective theory has some difficulty in justifying the use of a rule that is essential for the process of prior opinion convergence to happen, the same need not to apply to the intersubjective theory of probability.

As to the objection that Dutch book arguments fail to give a proper account of scientific reasoning, since nature is not a cunning bettor trying to win money off the scientists, Gillies seems to have a good reply. He acknowledges that intersubjective probabilities cannot be introduced by taking the scientific community to be playing a game against nature. His proposal is to take betting quotients just as one particular way of

rendering degrees of belief measurable because betting is one particular observable effect of believing. For this purpose, the Dutch book approach can be maintained if we introduce the concept of a hypothetical experiment in which a group of scientists would bet against an experimenter on their degree of belief in a certain hypothesis h based on a certain common background knowledge which they all adhered to after rational discussion (see Gillies 1991: 532).

In any case, the use I am going to make of the idea of convergence of opinions in my application of Bayesianism to the epistemology of theistic belief need not comply with all the niceties of this concept as required by confirmation theory in natural sciences. In the case that matters to this thesis, convergence need not necessarily lead to total consensus, since, following Swinburne's account, a posterior probability which is simply higher than 0.5 is all that is required for justified belief, rather than one close to 1. In addition, in my proposal, convergence will serve as a regulative horizon to guide debate, as a way of maintaining the hope that initial disagreement can be settled through rational argument. So, Bayesianism may be an insufficient account for confirmation theory in natural sciences, where broad consensus on empirical information and research methods prevail to a point that even the convergence theorems are not enough. Still, if the intersubjective theory of probability can give a good interpretation of hypothesis assessment in contexts that deal with degree of belief instead of the objective probabilities as required by natural sciences, it may be worth trying it in the epistemology of theistic belief. It is on the application of Bayes's theorem to the epistemology of the belief in God's existence in the light of the intersubjective theory of probability that I will elaborate in the next and concluding chapter of this thesis.

Chapter 8 – Intersubjective Probability and the Epistemology of Theistic Belief

Having analysed and criticised Swinburne's appeal to Bayes's theorem and religious experience in the epistemology of theistic belief in chapters 1 to 5, and having looked at alternative approaches to religious experience and probability theory in chapters 6 and 7, this final chapter will consist of three parts. I will start by applying the intersubjective theory of probability and Alston's approach to religious experience in the construction of a positive proposal to the use of Bayes's theorem and religious experience in the epistemology of belief in God. The next step will be to compare my proposal with Swinburne's in order to clarify further the approach developed here. Thirdly, I will discuss the sense in which the intersubjective Bayesian account represents a contribution to the epistemology of theism.

1. Intersubjective Probability and Theism

As we saw in Chapter 7.4 (pp.243ff.), the intersubjective theory of probability requires the delimitation of the group involved in the betting behaviour experiment so that the prior probability of a hypothesis may be assigned according to their shared degree of belief in it. This initial degree of belief will be measured by the rate the group is prepared to bet on the hypothesis at issue, given both a common purpose that unites the members and a shared set of background information that constrains their probability assignment.

In my application of the intersubjective theory to the justification of theism, I will need then to single out the groups that will represent at least the main parties involved in this discussion. Unfortunately, any delimitation of these groups will

involve a certain degree of informal judgement that may prove controversial at some point, a situation analogous to the one involved in determining the characteristics of a sample in statistical research. However, in contrast with the logical theory and the objectivist approach, the intersubjective theory of probability permits us to consider in probabilistic estimation both non-statistical information and judgements that are not based on universal and totally impersonal criteria. As we saw above, the main reason for this acceptance is that for intersubjectivists some degree of informal judgement is inevitable in matters of probability, and even logicians, despite their intentions, use informal judgement at every turn. For the intersubjective approach, as an extension of the subjective theory, the best way to diminish the degree of arbitrariness involved in this procedure is, on the one hand, to assume this non-objective element explicitly, and on the other, to submit any personal judgement to plausibility evaluations according to what is known about the subject within a particular group of researchers. Although it acknowledges the need for a starting point that cannot be entirely justified, this procedure obviously does not eliminate the risks involved in stipulation. Nevertheless it at least puts a considerable constraint on any exclusively personal opinion, namely the background knowledge assumed in the area to direct the plausibility assessments.

Given the proviso above, the characterisation of the groups involved in the philosophical debate about the justification of theistic belief needs to take into account some information commonly accepted in the philosophy of religion researchers' community. In order to do so, we may consider more particularly what it is that leading representatives of this community assume about the issue. This may still not solve our problem for, given that these leading representatives may disagree among themselves, we are still faced with the decision of choosing one of the positions in

dispute. In the case of the present thesis, however, the fact that it is dedicated to the particular approach to the problem of justification of theism developed by Richard Swinburne, who is undoubtedly one of the leading figures in the area today, should provide a good starting point. Let us then attempt to stipulate the groups to which the betting quotients regarding the hypothesis of theism may be assigned. I will have in view the approach to this problem advanced by Swinburne to see if, from his position I can draw conclusions that can be extended to the whole area of analytic epistemology of religion.

As we saw in Chapter 1.1 (pp.14f.), Swinburne addresses his efforts in justifying theism to the compatibility between believing in God and sharing in the intellectual values, general methods of reasoning and information prevalent in modern academic and scientific circles. I believe his choice of interlocutor is particularly fortunate because this is the medium where the question of justifying the belief that there is a God in intellectual terms is more pressing. In fact, this type of question specifies degrees of relevance determined by an interest in theoretical questions and the existence of an alternative world view with which theism can be contrasted in different contexts. So, it is reasonable to assume that in a more homogeneously theistic environment, in which questions of intellectual justification are not particularly important, the intellectual respectability of the belief that there is a God is very little challenged¹. This is certainly not the case with modern academic and scientific circles, not only because questions about truth and the probability of a

¹ Consider, for example, East Timor during the Indonesian occupation, when Christianity, particularly Roman Catholicism, was universally adopted, becoming not only part of the Timorese identity but also of their resistance against oppression (see Kohen 1999). In the terms of the present discussion, Timorese society would not constitute a good sample for determining the prior probability of theism regarding the philosophical discussion of its justification because there was no questioning of the belief in God in that context and because this problem simply had no relevance for them at that moment, because they had far more pressing issues to deal with.

hypothesis are central to their concern, but also given the prevalence of a naturalistic and materialistic world view in such circles.

Given the considerations above, we could define one of the groups involved in ascribing a prior probability to theism from an intersubjective point of view as consisting of those religious believers interested in reconciling the belief in God to the tenets of philosophic and scientific reason. For this group, the philosophical discussion about the justification of the belief in God is clearly relevant, for not only do they participate in both a religious community and an intellectually sophisticated environment that challenges that belief, but they also take this conflict as a theoretical problem that deserves consideration. In the terms of the intersubjective theory of probability, the common purpose that defines that group is of giving a solution to justifying belief in God that is acceptable both to religious and scientific and academic circles.

The fact that I concentrate on believers that belong to both religious and secular intellectually sophisticated circles in order to define the relevant group does not mean that the theoretical justification of theism is relevant only to this group. Indeed, given that there is a propositional content in theistic belief, the discussion about its rationality and degree of probability has intrinsic relevance to theism. As a result, since those who both profess a religious belief and belong to academic and scientific circles are the most exposed to the epistemological challenges to theism, a successful answer to the questions that this special group of believers face will be also highly significant to the justification of theism as such.

If the academic and scientific context is where the epistemological justification of theism is most required, Swinburne's strategy of searching for a dialogue with non-believers in those circles really seems the most appropriate. The

retreat to fideism or to attempts at justification exclusively in terms of the internal features of religion cuts no ice, since they can only have resonance in contexts where religious belief is not challenged, and then where the justification problem is not really posed. In other words, the most that strategies of justification which appeal only to internal criteria of religion can manage to show is that religious beliefs are justified in a religious context. If the theoretical justification problem arises from questions posed by non-religious individuals, then the challenge is simply not met by purely contextual or fideistic positions. In sum, I think Swinburne is right in claiming that this kind of approach does not give a proper answer to the scientific and academic questioning of theism, being in fact a sort of surrender to the claim that theism is not intellectually respectable given the background knowledge shared in this environment².

However, while I may agree with Swinburne that one needs to take into careful consideration the background knowledge of members of scientific and academic circles in a proper justification of theistic belief, I do not accept that this implies there is only one rational way of ascribing a prior probability value to theism. As we saw, according to Swinburne, the prior probability of theism should be evaluated fundamentally according to the universal and *a priori* criterion of simplicity, which any rational person should follow, no matter whether theist or atheist. Yet, if my criticisms of this criterion and of its application to theism are correct, its impersonal and universally applicable character becomes doubtful.

² I realise this remark may be controversial in view of what is held by the movement of 'Christian philosophers', of which Alvin Plantinga is one of the leading figures. However, because of his new externalist approach I do not include Plantinga among those who disregard the dialogue with the scientific community and who appeal only to elements internal to religion in this debate. I will spell out these points in section 3.

In using a Bayesian approach to the problem of justification of theism based on the intersubjective theory of probability, I do not aim to ascribe a prior to this hypothesis that is universally acceptable. Instead, the prior probability of theism is estimated differently according to the different groups involved in this debate. We have, on one side, religious believers that both accept theism and participate in scientific/academic circles, and on the other side, the atheists. Among the atheists, however, many different groups can be distinguished, since the hypothesis of theism as enunciated by Swinburne can be denied in various ways. Yet, since my proposal is focusing on modern, secular, intellectually sophisticated groups, it can reasonably limit its attention to ontological naturalists – understood as those who postulate that there is nothing apart from the objects of the natural world. So although there are infinite ways of denying theism, the only one really relevant to the debate in question is that world view which has been strongly established in the academic sphere since Laplace declared there was no need for the hypothesis of God in his physics.

Swinburne ends up limiting his analysis to the naturalists as well, but in clear contravention of his theory of probability. Despite his attempt to reduce the number of rival explanations using objective *a priori* criteria, he leaves aside many other possibilities that are also incompatible with theism, such as pantheism or absolute idealism. From the point of view of the intersubjective theory of probability, these options are not considered simply because they are not relevant to the justification of theism – given what we know about modern academic and scientific circles.

For the intersubjective approach, in addition to the common purpose that unifies the group, it is required that the members be informed about the degrees of belief shared by the group and correct their individual priors accordingly. In order to apply this requirement we need to clarify what is the particular background

knowledge that identifies each of the two parties involved in the debate about the justification of theism. In general terms, theists and atheists may be said to have in common a set of values and information that are acknowledged in modern scientific and academic circles, but in addition to that, each group also has beliefs that are incompatible with each other, namely the belief that there is a God and the belief in ontological naturalism respectively. What we have then is a large group defined by the background knowledge commonly accepted by all those who belong to the scientific and academic environment and two subgroups that are distinguished from each other because of a theistic background or lack of it.

At this point we might use Alston's concept of doxastic practice to understand a little better what is at issue. As presented above, theists and atheists involved in the discussion about the justification of theistic belief both participate in a doxastic practice that is defined by the academic and scientific culture of the late 20th-early 21st century Western world. We have here all central elements of a doxastic practice such as: being acquired and engaged in before being criticised, having an override system, being interconnected, being socially transmitted and shared; and having a distinctive set of presuppositions that can change (see Alston 1991: 187-8). It is not easy to define what precisely the set of values and information shared by theists and atheists is in this context, but it seems uncontroversial that to be part of this culture we must accept the necessity of forming beliefs in a coherent and consistent way, searching for information in order to improve and increase our present stock of knowledge, and correcting our previous beliefs on receipt of evidence provided by established scientific results. In the academic and scientific doxastic practice, broadly defined by the obedience to formal constraints of logic and probability laws, the heuristic value of searching for evidence to improve our knowledge, and the content provided by

established scientific research will be the common ground on which the debate between theists and atheists will be able to take place in a productive manner.

However, the members of the groups involved in the debate on the justification of theistic belief also participates in other doxastic practices, particularly, they belong to practices that are incompatible and provide rival understandings of the same set of data. We have the atheists who take ontological naturalism as the best theory to account for the phenomena Swinburne considers in his analysis, such as the existence of the universe, the order in natural happenings, the providential character of the world we live in, the occurrence of conscious beings, of extraordinary happenings in the world like purported miracles, and the fine tuning of the universe. For the atheist, there is no reality apart from the physical world and the theoretical concepts with which we attempt to explain it. Nevertheless let us assume that the atheist involved in this debate accepts that the concept of God is meaningful and coherent, but believes its plausibility is very low, since it is dispensable to any scientific account of nature and corresponds to a reality that does not belong to the natural world.

I postulate that the theist involved in this kind of debate will share the values and background knowledge of the academic and scientific culture, to whose questioning of his religious beliefs he wants to respond. What differentiates him from the naturalist is that the theist adds to the secular experience of the world a religious experience to which he either has had access directly or through testimony. Religious experience will be in this context not a piece of evidence to be explained by the rival accounts of theism and atheism, but grounds for initial belief particular to the theistic side. As in Alston's approach, the theist will find himself believing that there is a God well before he has been able to contrast that belief with any alternative. His

adherence will probably have occurred at an early age, but this does not mean he does not have grounds to believe that there is a God, since he participates in a socially established group who share a particular set of background concepts which enables them to perceive certain phenomena as God's handiwork or God's presence or God's deed. In addition, the same set of background concepts provides them not only with a system of checking and test standards to evaluate the outputs of the particular religious doxastic practice they belong to, but also a degree of self-support related to the aim and structure of this practice (see Alston 1991: 250). In sum, the theist's belonging to a given religious doxastic practice that includes the belief that there is a God – and in the present discussion it does not matter if it is Christian, Islamic or Jewish doxastic practice – will ground him in ascribing to the theistic belief a higher degree of initial plausibility (or in the terms of the intersubjective theory of probability, a higher betting quotient) than the atheist.

Yet, once he is engaged in this debate, the theist will have a different assessment of the initial probability of theism from that ascribed by the theists who are not in the same context. Because he is exposed to a constant challenge to his religious beliefs and shares the values and information of academic and scientific culture, the theist I am considering in my account will have a lower degree of belief that there is a God than those who are not in the same context. As mentioned at the end of Chapter 6.3.3 (pp.199f.), his awareness of naturalistic interpretations of mystical perception, the recognition of religious pluralism as an instance of the religious ambiguity of the world, and the fact that theism has increasingly lost credence in the scientific world view, will make this theist decrease his degree of belief in the hypothesis of theism in the context of the discussion of its justification. In sum, the theist's side in my account will have a higher degree of belief in the

existence of God than the atheist, grounded on the religious experience and background concepts he has acquired from his particular religious doxastic practice. On the other hand, although his initial degree of belief in theism given his religious background can be estimated as higher than 0.5, due to the sharing of information and other elements that are present in the scientific environment, it should not be too close to 1.

My account of this debate using a Bayesian intersubjective theory of probability gives us two different estimates of prior probability to start with, one for the atheist and another for the theist. These estimates are based on background knowledge that is common in all that concerns information, logical and probabilistic rules and heuristic values that are distinctive of scientific and academic circles, but that is divergent as regards religious experience and its conceptual framework. The likelihood inference, which is the most objective part of a Bayesian reasoning process, will be made in this model on the basis of the common ground shared by the two groups. In other words, the discussion of the probability of the theistic hypothesis will be based not only on their initially divergent prior degrees of belief, but also on evidence, inductive patterns and evaluative standards of explanatory power that are commonly accepted in academic and scientific circles. Assuming that the prior estimates are not too divergent for the reasons given in the previous paragraph, the model is able to account for a possible convergence of opinion insofar as public evidence is evaluated according to the same evaluative standards, a process that is formally described by the Bayesian rule of conditionalisation. In principle, even if theists and atheists start from different degrees of belief in the existence of God due to partially different backgrounds, their assessment of this hypothesis given commonly

acknowledged evidence and evaluative patterns can eventually wash out that divergence towards an agreement about the final probability of theism.

Let us then summarise the main features of this outline of a Bayesian intersubjective account of the philosophical discussion of the justification of theism. I have assumed this discussion is carried out between those who believe in God and those who do not in the particular context of the academic and scientific environment. In other words, this approach postulates that people have a starting point in this debate, which in Bayesian terms means that the groups involved have prior degrees of belief as to whether there is a God stemming from their adoption of a particular doxastic practice. Both parties will be judged in terms of the coherence of their degrees of belief, according to the probability calculus, which is the first sense of rationality in Bayesian terms. This discrepant initial prior probability will entail, to begin with, a divergent posterior probability, that is high for the theist and low for the atheist. Before the discussion is settled, they will both be rational in view of their respective starting points, since the high prior probability assigned by the theist will take the belief that there is a God to a high posterior, while the opposite will be the case for the atheist.

As the pieces of evidence are taken into account, that is, as long as the debate carries on, the initially divergent priors may tend to a convergence through conditionalisation, if the common part of the rival group's background knowledge is sufficient to settle the likelihood inferences. In other words, the parties may show that certain phenomena are better explained by theism or by ontological naturalism so that the priors are updated accordingly in a cumulative case either in favour of theism or of its rival in the dispute. The crucial requirement for this increasing agreement to occur will be a shared background knowledge that is large enough for the theist and

atheist to move within. In following the rule of conditionalisation, the rival groups in this debate will be complying with the second condition for rationality in a Bayesian sense, that is, the updating of priors through argument in light of evidence.

The intersubjective approach to the epistemology of theism can also provide an account of the third sense of a Bayesian type of rationality. Beliefs are rational in this sense if our acceptance of them is proportionate to their degree of probability after considering the evidence available. The model points to a regulative horizon in which initially divergent prior degrees of belief converge to the point of consensus in those cases where the background knowledge shared by the parties is sufficient to determine the likelihood inferences. Further, during the period that the debate is not resolved by means of discussion, both parties could be considered as epistemically entitled to their respective degrees of belief in a proposition that it is at least more likely than its alternatives. Before the debate on the basis of commonly accepted evidence, logical rules and inductive standards is able to bring about an agreement, the posterior probability of theism will be largely determined by their respective prior degrees of belief. Once their respective priors entail a posterior higher than the rivals to each group, they could be declared to be rational according to this meaning of Bayesian rationality as well, although only temporarily, that is, until one of them is shown to be wrong through argument.

So much for this outline of the methodological proposal based on Bayesianism and religious experience in an intersubjective way. In the next two sections, in which I compare my proposal with Swinburne's, and discuss the place of my approach in the contemporary analytic philosophy of religion, I hope to clarify and expand on this account.

2. The Intersubjective Approach and Swinburne

From what was said in the previous section, it can be seen that the approach to the epistemology of theistic belief postulated in this thesis agrees in several places with the proposal developed by Richard Swinburne. Firstly, I accept his contention that the debate on the justification of theism should be specially directed to academic and scientific circles of a certain kind, and that if this discussion is to be resolved through argument, the parties involved need to have a great deal of background knowledge in common. In other words, if the theist accepts that his belief that there is a God needs to be justified in theoretical terms, he should address his intellectual effort towards the environment where the theoretical questioning of theism is currently undertaken at its sharpest, that is, in academic and scientific circles. This means that, if the theist aims to make his belief intellectually respectable in this environment, he needs to take seriously the established elements (both formal and material) of modern scientific background knowledge, and engage in a fruitful dialogue with secular subscribers thereto.

A second point in which I agree with Swinburne concerns the type of argument to be used in the context of this debate. Although I do not disdain initiatives that attempt to reinstate the ontological argument, I take natural theology as fundamentally an inductive enterprise, that is, its conclusions will not follow from the premises in a logically necessary way, but will be based on inferences to the best explanation. Related to this point is my partial agreement with Swinburne as regards the place of Bayes's theorem in the justification of theism since, like him, I take Bayesianism as an illuminating formal account of inductive reasoning. However, in contrast with Swinburne, I do not assume that it is the best representation of the

process involved in the confirmation of hypotheses in natural sciences, which is why my agreement in this matter is only partial.

As a consequence of our congruence concerning the fundamentally inductive character of natural theology and the possibility of interpreting induction using Bayes's theorem, I also agree with Swinburne that we can employ the notion of probability to refer to hypotheses and beliefs. If believing is a matter of degree, it can prove useful to measure it in terms of probability values, so that we can check both the coherence of our initial degrees of belief and how far the inductive process changes those prior degrees of belief in light of evidence. The notion of probability can then be helpful in spelling out a theory of rationality that takes as its basis the sheer coherence among the ideas. The second level in a Bayesian concept of rationality is the updating of prior degrees of belief in view of evidence. As to the third level, one is rational as long as one believes a proposition that is more probable than any of its alternatives.

Although this is another issue to be elaborated on in future, the concept of rationality that stems from the Bayesian intersubjective approach has some advantages over that defended by Swinburne, as seen in Chapter 1.4 (pp.36f.). Firstly, I do not consider investigation as playing any crucial part in this matter. The search for new evidence is highly valued in the scientific environment for example, but it is difficult to see why someone who was not striving to test his beliefs in all contexts would thereby be acting irrationally. However, as long as evidence is considered, and we are in the academic or scientific context, our corresponding degree of belief should be updated accordingly, as a requirement of rationality.

A second important difference is that my conception takes the highest level of rationality suggested by Swinburne ('we should believe in propositions that are

probable in view of correct inferential standards and true information') as fundamentally a regulative horizon, that is, an ideal we aim for in our beliefs, but not reached by any of our actual beliefs so far. In principle, our actual beliefs can always be corrected and updated in view of that horizon. In fact, Swinburne also refers to correct inductive criteria and rightly basic beliefs as elements of an epistemological ideal only manifested by a logically omniscient being (see Swinburne 2001a: 153). I agree that given the regulative character of the highest level of rationality, the inductive standards we use – such as the principle of simplicity – may be *a priori* in the sense of not being empirical propositions and of being conditions of rationality. However, while I accept the *a priori* character of simplicity in these senses, I also maintain that it is part of a given background knowledge shared by a research community, and that it is in relation to that background knowledge that simplicity acquires a concrete meaning and can operate as an inductive criterion. In other words, instead of postulating the idea of a logically omniscient being, I adopt intersubjectively shared background knowledge as the concrete stance in view of which true information is obtained and inductive standards are acquired and, if need be, corrected.

A third difference between this thesis and Swinburne's approach, regarding rationality refers to the role played by considerations external to the believer in the justification of a belief. As we saw, Swinburne opts for a strictly internalist approach to justification (see Swinburne 2001a: 163), according to which the grounds for a belief should be accessible to the believer through introspection. Although this is still a point to be further elaborated in the future, the approach developed in this thesis allows for a mixed approach to justification. It considers the believer as justified in his posterior probability of h providing this is higher than its alternatives, when this is

the outcome of the relationship between hypothetical and evidential beliefs. The initial probability, however, can be grounded in the fact that the believer belongs to a certain doxastic practice that has shaped his conceptual framework. In this respect, what justifies his initial beliefs includes elements external to his mental state, that is, the features of that specific doxastic practice and the relationship among them, of which the subject is not necessarily aware. In this adoption of a mixture of internalist and externalist views of justification, my approach is closer to Alston's than to that developed by Swinburne (see Alston 1995: 40).

Indeed my position also contains other important differences from Swinburne's Bayesian interpretation of the epistemology of theism. A major disagreement involves the kind of probability theory used to guide the estimate of prior probability, and the selection of the competing hypotheses that are alternatives to theism. Swinburne assumes a version of the logical theory of probability according to which our prior probability estimations should follow universal and objective criteria of theory choice in addition to the axioms of probability calculus, among which he particularly favours simplicity in his application of Bayesianism to the justification of the belief in God.

Swinburne's intention in proposing a universally acceptable criterion for estimating prior probabilities like simplicity was to provide a way to settle this difficult question in Bayesian epistemology in a formal objective way. However, my discussion of the limits of his principle of simplicity attempted to show that the application of this criterion involves a great deal of informal judgement, and that its definition is much clearer in the context of a specific debate in a particular research community. In other words, given all the setbacks in Swinburne's attempt to deal with priors in the terms of the logical theory of probability, I have chosen another

Bayesian way to deal with the epistemology of theism, namely by means of the intersubjective theory, whose approach to theism was spelt out in section 1 of the present chapter³.

Another major difference between my proposal and Swinburne's is the role played by religious experience in my Bayesian account. As we saw in Chapter 4, Swinburne aims to use that phenomenon as a public piece of evidence in a universally acceptable inductive argument. Yet, if the considerations advanced in Chapter 5 are correct, religious experience does not provide the type of evidence Swinburne aims for, since its evidential value depends on a conceptual framework that is not universally shared. In addition, in my view, the analogy between religious experience and sense perception is not sufficiently strong to allow scepticism about one to be equivalent to scepticism about the other.

I adopted an approach to religious experience that does not take it as a premise for a universally acceptable argument, but as the direct ground for a initial degree of belief in theism that depends on the participation in a particular religious doxastic practice. I aimed to provide a more realistic approach to what is at issue in the debate about the justification of theism and to escape from the criticisms directed to Swinburne's position on this matter. Instead of people starting from neutral and universally determined *a priori* principles, it is more appropriate to picture this discussion as involving groups with different starting points of view regarding the issue. The theist engages in this debate from a perspective biased by the religious background in which he was brought up while the naturalist starts with another bias.

³ The stress on the principle of simplicity as the sole determinant of the prior probability of theism is also the main argument in his reply to Mackie's objections to his argument from consciousness (see Swinburne 1983: 387). However, in view of the requirement regarding the conditionalisation rule, Swinburne's reply is mistaken, since there are empirical data considered in the background knowledge

A totally neutral unbiased starting point is not what we generally have in this kind of philosophical debate (or, for that matter, in any). Religious experience contributes to the reinforcement of the theist's degree of belief in theism and helps to justify it via the corresponding doxastic practice. However, when it comes to discussing the justification of this belief with people who do not participate in the same religious doxastic practice, then religious experience will be able to provide only an initial probability with which the theist will start off his debate with the naturalist, as is suggested by Alston's approach (see Alston 1991: 286).

As a result, my position regarding religious experience will require a theory of probability that allows for more than one rational estimate of the prior probability of theism, which Swinburne's approach does not. In the intersubjective view that I adopt, this estimate will depend on the acceptance of the particular religious conceptual framework that both informs and is grounded in religious experience. In other words, in my proposal for using Bayes's theorem in the discussion of the epistemology of theism, I recognise that the two main parties involved attribute different priors to the belief that there is a God.

Recognising that there are different starting points in this debate does not entail that the intersubjective approach is relativist. The way in which I suggest using Bayesianism and religious experience in the justification of theistic belief does not mean giving up the project of resolving this question through argument even though we abandon a neutral, universal way of establishing prior probabilities. In fact, given the effects of the conditionalisation rule on cumulative arguments, the only precaution that need be taken regarding prior probabilities is that the rival estimates are not

as regards the argument from consciousness in addition to simplicity. Yet, if my arguments are correct, this does not mean the theist should assume exactly the same background knowledge as Mackie.

extremely disparate. This proviso is satisfied in my proposal by the claim that the justification of theism will only be resolved through argument in the case where there is a broad background knowledge in common between the contending parties. In the model formulated in the previous section, this condition was met by the suggestion that this question is primarily of philosophical interest, and by considering the problem as the attempt to show that belief in God is intellectually respectable given the inferential patterns and the body of information already established in certain academic and scientific circles.

If the prior probabilities are not extremely disparate, and given a common background knowledge on which the contenders can move together in their discussion, the basic conditions for a convergence of opinion in principle are in place. The fact that they came from different starting points does not really matter given that there is the possibility that they will be washed out by means of the likelihood inferences. As we saw in Chapter 7.2(pp.224f.), this is a common reply of subjective Bayesianism to the charge of not being able to account for the objectivity and consensus observed in theory choice in science. In fact, this feature is recognised by all those who accept the principles of Bayesian epistemology, as this statement by Swinburne illustrates

However it does not seem possible to lay down any more precise rules for determining $P(h_i)$. Nor it is necessary where there is a substantial amount of evidence of a kind which makes theories h_i differ from each other markedly in their accuracy, for example where our sole evidence is that many α 's have been observed and a certain proportion of them found to be Q . For it is easy to see that in that case $P(h_i/e)$ are affected much less by $P(h_i)$ than by $P(e/h_i)$, the other factor which determines the relative values of $P(h_i/e)$ (Swinburne 1973:132).

In other words, the fact that we may lack precise rules for determining the prior probability of a hypothesis is not really problematic as long as there is sufficient evidence to make one hypothesis more likely than another.

Still, one could object that it is very controversial in itself to claim that there is evidence capable of making theism or naturalism more likely than its rival to the point of washing out the divergent priors assigned by theists and atheists. The amount of evidence handled in this discussion is generally very limited, that is, what we have is little more than the phenomena discussed by Swinburne in *The Existence of God*. Moreover, we can hardly see any convergence in the opinions of the two contending parties that result from the arguments of natural theology. In fact, the critic of my proposal could claim that we can hardly observe any agreement between theists and ontological naturalists on the existence of God at all.

Although the space dedicated to a positive proposal in this thesis has ended up being very limited, at least a provisional response to these two serious objections can be given.

First, the amount of evidence dealt with in traditional natural theology may be limited, but we cannot discard the possibility of new arguments being brought to the discussion in future. In fact, we can see in Swinburne himself this thesis that the arguments involved in this debate are not so limited in number as the influential Kantian threefold classification may make one suppose (see Swinburne 1991: 12)⁴. However, even if there is a clear delimited set of evidence involved in this question, this does not mean the discussion cannot go forward. As it was suggested in Chapter 7.3.5 (p.241) when dealing with the problem of old evidence in the Bayesian theory of confirmation, re-elaboration on previous explanations of evidence e by hypothesis h may change the result of likelihood inferences. The point regarding the confirmation of hypotheses in view of phenomena previously known is that the values of $P(e/h.k)$

⁴ Another author that does not subscribe to the thesis of limited amount of public evidence in the theistic debate is Alvin Plantinga (see Plantinga 1998: 91f), despite his position regarding natural theology not being so optimistic as Swinburne's.

and $P(e/k)$ do not depend on how known or old evidence e is, but on how puzzling or uncertain e is given background knowledge. The discussion involving the likelihood of a hypothesis may then evolve through improving the understanding of the hypothesis, or through relating hypothesis and evidence in a different way, or through highlighting an aspect of either h or e not put forward yet, so that e may become better explained. In other words, the debate on the justification of theism can in principle go ahead towards increasing agreement even given a limited set of evidence.

Second, the difficulty in reaching agreement through argument regarding the justification of theism does not seem to be a problem confined to this philosophical issue. Indeed, it is a recurrent (and unfortunate) feature of philosophy that opposite parties rarely reach an actual consensus through argument. This, however, does not necessarily mean philosophical debate is all in vain. Arguments may not be conclusive, but can be evaluated regarding their logical consistency, their consequences for other areas and the plausibility of their assumptions. Surely all these patterns of evaluation can in turn be subject to discussion, but this only highlights the proviso within my proposal. It is possible that there is no way to go forward in this debate because the background knowledge in common between theists and atheists is actually too thin or non-existent. This can be the case, but it can also be the reverse, and this possibility is sufficient to allow that my proposal is not necessarily relativist. I do not abandon the possibility of establishing a solution to this question through rational means using objective evidence, even if this end cannot be achieved at present.

A final difference between my proposal and Swinburne's which I would like to emphasise concerns the evaluation of Bayesianism as a theory for the confirmation of natural science hypotheses. As we saw, Swinburne relies on the Bayesian account

of inductive inference in his rhetorical strategy directed to the scientific community. As part of this strategy there is the idea that if Bayes's theorem expresses the form by which scientific reasoning proceeds then a case in favour of theism that uses the same type of inferential pattern should be recognised by scientists as displaying the same rigour and intellectual respectability as those offered for scientific theories. In other words, we can interpret Swinburne's project as including an analogy between theistic belief and scientific hypotheses and their respective modes of justification in his attempt to respond to the challenges posed by the modern academic environment to religious beliefs.

However, unlike Aquinas in the 13th century, in whom Swinburne finds inspiration for his programme, Swinburne has to resort to something different from the scientific concepts and methods of research of his time in his defence of theism. As we briefly saw in Deborah Mayo's criticism in Chapter 7.3.3 (p.233), Bayesian statistics are very rarely used in actual natural science research. In addition, not only is scientific inquiry incomparably more diversified and complex today than it was in Aquinas' time, but its procedures are also less akin to logical and philosophical debate than Aristotelian science used to be. What it turns out Swinburne is doing is adopting a certain interpretation of scientific reasoning in order to liken the justification of science to the justification of the belief in God. In other words, he uses a theory from the philosophy of science, rather than science itself, to ground a position in the philosophy of religion.

However, there is a fierce controversy going on in today's philosophy of science about the accuracy of Bayesianism as a theory for the confirmation of scientific hypotheses. Despite its relative success in accounting for certain problems in scientific methodology, and despite the fact that it is considered by many to be an

improvement over hypothetico-deductive models of scientific inference (see, for example, Earman 1995: 63-86 and Horwich 1992: 205-214), there are considerable criticisms of both logicist and subjectivist attempts to defend Bayesianism as an accurate interpretation of scientific reasoning. Given the complexity and extension of this discussion I am not able to make a position on this topic and, in any case, it is not strictly required by my approach.

In contrast with Swinburne, this thesis adopts a more minimalist view about Bayesian epistemology. Bayes's theorem is merely a possible account of inductive inference which can be helpful in describing in formal terms the steps involved in an inference to the best explanation. An inference to the best explanation captures the essence of natural theology. For me the real interest of the Bayesian approach is not in its expressing the inferential method in natural sciences specifically, but in the particular way it permits us to consider the arguments for the existence of God, by revealing their non-demonstrative character and by describing how they can make up a cumulative case. In this sense, Bayesianism is taken as an interesting attempt to express inductive reasoning in formal terms, so that our degrees of belief can be controlled by constraints such as coherence, updating of initial beliefs in view of evidence and other elements of Bayesian epistemology. Consequently, I need not hold that Bayesianism is the best account of scientific inference to use it in an approach aimed at meeting the challenges to theism presented by the scientific and academic environment. If Bayes's theorem gives us a good possible way to interpret inductive reasoning in general, then its use permits us to discuss the matter in an argumentative manner recognisable to those who question religious beliefs in that environment.

My interpretation of Bayesianism is very cautious as regards its description of scientific reasoning. The analogy I establish between theism and scientific theories is much weaker than that which Swinburne seems to suggest. As a result, the difficulties involving Bayesianism as a confirmation theory of scientific hypotheses and the many discrepancies between scientific and metaphysical theories are not as harmful to my account as they could be to Swinburne's.

3. The Intersubjective Approach and the Epistemology of Theistic Belief

From what has been said in the two previous sections, we may describe the intersubjective approach to the Bayesian epistemology of theism as a means of accounting for the interaction between the use of arguments in natural theology and the non-inferential grounds provided by religious experience in the justification of the belief in God. Understood in this way, the position developed in this thesis may be entitled to claim a particular place in the diversified spectrum of the contemporary analytic epistemology of religion. This is the subject I will develop in this last section of the present chapter.

A useful way of classifying the many approaches to the epistemology of theistic belief is offered by William Abraham in his *An Introduction to the Philosophy of Religion*. Although any attempt to categorise the different positions in this area runs the risk of oversimplification and reductionism, Abraham provides an interesting way of clarifying the alternatives. Abraham's classification of the contemporary approaches to the epistemology of religion falls into four categories. If we discard 'theological fideism' because of its purely theological character, and because it sees philosophy and faith as incompatible (see Abraham 1985:77), we have then three main accounts of this matter. At one extreme there is what he calls 'hard rationalism',

that is, the attempt to deal with the question of the justification of belief in God from a purely rational point of view, following the tradition of natural theology. The other end of the spectrum is occupied by philosophical fideism, which stresses the importance of doing justice to the internal content of the Christian faith and to the intensity of feeling involved in religious experience (see Abraham 1985: 99). The middle position, which attempts to pursue both the quest for rational justification of theistic belief and respect for the internal aspects of revealed faith and its ground in religious experience, is described by Abraham as ‘soft rationalism’.

‘Philosophical fideism’ is represented in Abraham’s classification by Alvin Plantinga’s approach. Since Abraham published his book, however, Plantinga has changed his position. Yet, given that Plantinga is a leading epistemologist of religion, it is important to say at least a few words about his approach in relation to that which I am defending here. In his *Warranted Christian Belief* (2000), Plantinga has two main purposes. First, he wants to show the general public that there are no *de jure* questions regarding the justification of Christian belief that are independent of *de facto* objections to it (see Plantinga 2000: 191). If we take justification in the sense of fulfilling an epistemic responsibility in forming beliefs, then the accusation that Christian believers are not justified in their beliefs is not plausible. This is the case because if, after reading and discussing carefully all important critics of Christianity, the believer still takes these criticisms as far weaker than the overwhelming force she attaches to her religious beliefs, she is clearly not flouting any epistemic duty (see Plantinga 2001: 101). For Plantinga, a person who accepts the Christian beliefs in this basic way – that is, not because of arguments, but because of a inner certitude she thinks is a grace of God – is not irrational or unjustified in doing so, provided she carefully considers the objections against her belief. In fact, she can be mistaken, her

beliefs can be *de facto* false. Yet, this means that the real issue in this case is not whether Christian believers are rational in their beliefs, but whether Christian beliefs are true or not.

The second purpose of Plantinga's project is addressed to the Christian community only. He constructs a model to show how theistic beliefs taken in the basic way could have warrant (see Plantinga 2001: 220). 'Warrant' in Plantinga's epistemology is the quality that a justified belief needs to be considered knowledge (see Plantinga 1993: 19). Given his externalist approach, warrant is mainly a matter of beliefs being produced by proper functioning and being formed with reliable mechanisms. As a result, Plantinga suggests a model for belief formation based on Thomas Aquinas and John Calvin's idea that we all have a faculty created by God that is innate to humans and which permits them to know their Creator (see Plantinga 2001: 245-6). As a result, Plantinga maintains, if there is a God like that of traditional theism, then it is very likely that humans really have that faculty, and then that they have warrant for their beliefs. Plantinga is not concerned with theistic belief only. His effort is also addressed to the epistemological justification of the Christian system of beliefs which he calls 'the great things of the gospel', following Jonathan Edwards (see Plantinga 2000:80). To show how Christian beliefs could have warrant, Plantinga suggests an extension of his model based on a special warrant-producing mechanism that he calls 'internal instigation of the Holy Spirit' (see Plantinga 2000:201).

In a reply to a review by Swinburne (2001b: 203-214), Plantinga argues that being justified with respect to public evidence – Swinburne's concept of justification – is neither sufficient nor necessary for warranted Christian belief. The probability of Christian beliefs based on public evidence is very small given the 'problem of

dwindling probabilities', that is, the probabilities of each piece of evidence in favour of Christian beliefs must be multiplied, resulting in a value that is smaller the more pieces of evidence we consider (see Plantinga 2000: 280). Being so small, this probability value is not sufficient to hold the belief in the great things of the gospel with the force with which it is held by many believers (see Plantinga 2001: 217). On the other hand, says Plantinga, a belief can have warrant without being probable with respect to public evidence. In fact, the evidential base of the critics of Christian beliefs can be totally different from the Christian evidential base. In other words, there is no guarantee that there is an evidential basis common to both parties and neutral between them. As a result, what counts as a defeater for one may not count as a defeater for the other (see Plantinga 2001: 221).

Plantinga's problem of dwindling probabilities is related to Swinburne's approach to the probability of the components of the Christian creed, which is not the concern of this thesis. Perhaps Swinburne's piecemeal approach that Plantinga criticises could be rephrased in terms of a Bayesian cumulative case, and then the problem of dwindling probability would simply vanish⁵. However, because this is such a complex issue, I will not develop this thought here. It remains as another interesting point for future elaboration.

Let us then return to the discussion of the justification of theism. In a Bayesian approach, the posterior probability of theism is based on public evidence, as Swinburne holds. This type of evidence is considered in the likelihood calculations $[P(e/h.k)/P(e/k)]$. However, the final degree with which theism is justifiably believed

⁵ Plantinga is mistaken when he asserts that if I accept the probability that it will rain tomorrow is 0.9, I am not believing that it will rain tomorrow, but only that it is very likely that it will (see Plantinga 2001: 220-1). He makes here a confusion between belief and strength of belief, which Swinburne correctly distinguishes. In the case mentioned, I obviously believe it will rain tomorrow. The figure associated with my belief (0.9) is just a measure of its strength.

according to that approach also depends on a prior probability. At this point, the intersubjective Bayesian approach I am developing here is more on the side of Plantinga than of Swinburne. As I said above, instead of a universally and impersonally determined starting point, my account allows for different prior probabilities being ascribed by different groups involved in a debate. In other words, once my approach accepts externalist elements in the justification of prior probability assignments, Plantinga's Aquinas/Calvin model could in principle be used at this point, instead of religious experience. As a result, the Christian and the naturalist can start with different degrees of belief in theism. However, since the approach aims to offer a way of justifying theism theoretically (in Swinburne's sense, but also considering priors estimated as above⁶) by rational discussion, it requires a scenario where theists and atheists share a common background knowledge and an evidential base.

Indeed there is a deeper issue behind some of Plantinga's remarks on the justification of theism and Christianity which bears upon the question as to whether there can be a shared background knowledge *k* between theists and atheists. Plantinga defends the idea that this neutral common ground is available in areas such as mathematics, astronomy, physics, chemistry and large parts of biology. Still, this neutral field between naturalists and theists disappears when it comes to areas such as evolutionary biology and human sciences, where metaphysical elements play a very important role (see Plantinga 1996: 210-11). This intermediate position is based on a distinction between empirical evidence on the one hand, and theoretical hypotheses and background assumptions on the other, a distinction that is clearly granted in the

⁶ A belief is justified in the sense in which I am defending here if: 1) it is coherent, 2) the prior degree of belief is updated in view of public evidence, 3) its overall or final probability is more probable than that of its alternatives.

Bayesian approach. The theist need not adopt all metaphysical assumptions assumed by the naturalist, otherwise there would be no disagreement between them⁷. In my approach as in Plantinga's, the theist need not start from the same metaphysical positions as the naturalist. However, I do not see why this would necessarily lead to the idea of 'Christian science', as some maintain. In my view, the acceptance that theists and naturalists adopt different initial standpoints does not necessarily mean that there is no way of settling their differences through discussion, and that each of them has to resort to a particular type of science on the basis of a 'rejection of neutralism'. This can be seen in authors like John Stek (1990) and Roy Clouser (1991), in whose writings the position according to which scientific activity and religious commitment are deeply connected is particularly strong.

According to such authors, there are no neutral intellectual disciplines. Thus, there is 'Christian science' as opposed to other types. Plantinga himself raises this possibility:

For example, many Reformed Christians follow Abraham Kuyper in holding that intellectual endeavor in general and natural science in particular are not independent of religious commitment. Perhaps the credit for this idea should go not to Augustine, but to Tertullian. Tertullian has suffered from a bad press; one of his major emphases, however, is that scholarship – intellectual endeavor – is not religiously neutral (Plantinga 1996: 214, note 1).

However, one of the aims of the intersubjective approach is to suggest a way of resolving the issue of God's existence through rational discussion. Given that this aim can only be achieved by admitting a common neutral background between the parties involved, the idea of a religiously biased science is incompatible with my suggestion. The consequence of its admission in my proposal would be an

⁷ Plantinga's criticisms of ontological naturalism (see Plantinga 2000: 229ff) are not a criticism to science itself (see Plantinga 2000:406n). Rather, they reject a certain metaphysical interpretation of scientific data, and do so, in my view, based on public evidence and solid inferential standards. This is why I do not agree that his position is fideistic. See also Plantinga 1996: 210-1.

irremediable relativism, since there would be no way, even in principle, of washing out the initial divergence of probability estimations.

Abraham classifies Swinburne's programme as hard rationalist (see Abraham 1985: 115ff). It is characterised by the attempt to reinstate the arguments of natural theology in the form of a cumulative case that is quantified and laid out according to the probability calculus. The appeal to public evidence and logic – especially inductive logic and its main component in Swinburne's approach, Bayes's theorem – as the sole tools to be used in the justification of religious belief is what give this stance the character of hard rationalism (see Abraham 1985: 118). In addition, Swinburne reduces this discussion to the debate about God's existence, not allowing much room for the specific beliefs of a particular faith to interfere in the analysis.

Abraham finds many problems in the hard rationalist approach. Firstly, the reduction of the theistic tradition to a minimum core given by natural theology puts ordinary believers on the sidelines until the question of the epistemic justification of theism is sorted out by the philosophers (see Abraham 1985: 100). Secondly, the mystery and complexity of God are eliminated by being completely reduced and rephrased according to concepts accessible to secular believers. Thirdly, hard rationalism fails to account for the fact that the 'believer's assurance does not rise and fall with evidence' (Abraham 1985: 102), that is, the tenacity of belief which we observe among religious believers does not depend so directly on probability assessments. In fact, Abraham claims, 'many ordinary believers and most saints do not treat their religious beliefs as simply more probable than not. They claim a certainty which is much deeper than this' (Abraham 1985: 121). Fourthly, hard rationalism does not take religious experience properly into account in its approach to the justification of religious beliefs, considering this is not merely a piece of evidence

in an inductive argument, but an inward and subjective factor that is crucial to religious conversion. In other words, hard rationalism, in its attempt to talk in terms understandable to the secular believer, ends up to misrepresenting religious activity, which means it does not work as an epistemology of religious belief (see Abraham 1985: 129).

As we saw in Chapter 2.1.2 (p.45), Robert Prevost points to a problem with Swinburne's approach in addition to that suggested above by Abraham. According to Prevost, Bayes's theorem cannot account for the details of a crucial discussion in natural theology such as the problem of evil (see Prevost 1990: 21 and 26). Indeed, John Hick joins Prevost in claiming that Swinburne's probabilistic approach is not adequate to discuss the degree of disconfirmation the existence of evil means to the belief that there is a God. In contrast with Prevost, Hick claims that the problem with the Bayesian discussion of evil is not that it cannot account for the details involved, but that Bayes's theorem as a probability tool requires exact quantitative proportions to operate, and Swinburne does not provide any numerical values in his arguments. In fact, claims Hick, '[...] Swinburne has, rightly, not even attempted to establish such precise relative values. He is fully aware of the impossibility of doing any such thing' (Hick 1989: 108). In other words, the probabilistic argument Swinburne provides is simply a qualitative judgement informed by a formula that is fundamentally quantitative, but the question of God's existence does not allow for numerical estimates of probability. As a result, Swinburne's approach is not able to determine the probability of theism as he intended, or in Hick's words, '[...] the argument, fascinating though it is does not succeed. The universe does not permit probability logic to dispel its religious ambiguity' (Hick 1989: 108).

Hick is right when he says that probability basically involves numerical values and that Swinburne's approach does not take this fact seriously. However, Hick does not say why it would be impossible to estimate these values in the case of theism. There may be no way of justifying such an ascription using the logical theory of probability, that is, if we demand universally justifiable and neutral criteria for assigning those figures. Nevertheless, there is no such impossibility if we take probability as degree of belief that could be measured by the betting quotient in a psychological experiment. In other words, there is no problem in principle with attributing quantitative values as a measure of the degree of belief in a hypothesis in view of evidence using the intersubjective approach to Bayesian probability. Thus Hick's critique of Swinburne can be subverted.

All figures we can obtain will be disputable, but a figure may still be worth using since this procedure can be helpful, just as it is sometimes helpful to quantify a student's performance through a numerical mark even if this is not an exact quantitative matter⁸. Take the example of the problem of evil: if it does not make theism logically impossible then it does not reduce this hypothesis to zero probability. In this case, the degree of belief in theism in view of the occurrence of evil will be in a range defined by the extent to which the existence of God explains this piece of evidence in comparison with incompatible alternative explanations. Swinburne's defence and theodicy, however schematic they might be in *The Existence of God*, aims to provide the elements for making theism at least as compatible with evil as ontological naturalism. If successful, the result of that enterprise would really be that the argument of evil is neutral regarding theism and the main rival of theism, i.e. that

⁸ For an interesting discussion of the problem of numerical estimations of qualitative issues see Gilles (2000: 202) and Bartholomew (1996: 36-7).

$P(e/h.k)=P(e/\neg h.k)$, which means in this context that the likelihood of theism in view of evil would be 0.5.

In other words, ‘we lack the quantitative data needed to put the formula to work’ as Hick claims if we think only from a frequentist or logical standpoint in probability theory, which prevent any personal or intersubjective judgement in probability estimation. However, in the approach outlined in this thesis the ascription of values will be a matter of quantifying our degree of belief in a certain propositional relationship. Proceeding in this way, we may develop a clearer evaluation of the coherence of our degrees of belief and a better account of how the likelihood of theism in view of a certain piece of evidence interacts with the likelihood it acquires in view of other phenomena, by means of the updating of prior degrees of belief in the hypothesis.

Still, even if the Bayesian approach can help us to check the coherence of our beliefs and control the process of updating belief in view of evidence, Hick seems to have a point when he claims that ‘the universe does not permit probability logic to dispel its religious ambiguity’ (Hick 1989: 108). Certainly, Bayesian inductive logic is not able to dispel the religious ambiguity of the universe. But that is not its function, and in fact Swinburne has never held that it is. The formalisation of inductive inference provided by the Bayesian approach cannot by itself settle the problem of justification of theism for the same reason deductive logic cannot all alone take us to truth, namely because this is not their function. What we can expect from them is to find some guidance as to how to deal with the content of our beliefs so that we can draw conclusions about their validity or probability in a more coherent way.

Hick’s contention is analogous to Prevost’s criticism to the effect that Bayes’s theorem cannot prevent different interlocutors from drawing different conclusions if

they use different criteria (see Prevost 1990: 32). In fact, it would be surprising if it could. Bayes's theorem is an algorithm that gives you results depending on how you feed the formula, that is, if it has different inputs the outputs will obviously be different. To dismiss the Bayesian approach on the charge that it falls short of our expectations because of this point is analogous to say that deductive logic is of no avail because people who start with different premises will necessarily draw different conclusions in a valid inference. Prevost notices quite clearly the crucial divergence between Swinburne and Mackie regarding the prior probability of theism (see Prevost 1990: 39), but thinks this is a problem for the Bayesian account as a whole, and a reason for its outright dismissal. However, according to the view developed in this thesis, the problem raised by Prevost is not a failure of Bayesianism as such, but of the logical theory's account of it, which I criticised and to which I suggested the intersubjective approach as an alternative.

In fact, there are reasons to hold that the intersubjective approach to the Bayesian epistemology of theism may be an improvement on Basil Mitchell's cumulative case method for the justification of the belief in God, which Prevost takes as a better alternative to Swinburne's (see Prevost 1990: 94).

Mitchell's project is to find a method for discussing the justification of theistic belief in an argumentative way so that the question is not taken as either a matter of deductive proof or of 'strict probability'. This refusal to use deductive and inductive forms of reasoning in the attempt to justify theism argumentatively entitles him to be considered a good representative of 'soft rationalism' (see Abraham 1985: 106). According to Mitchell,

Among the reasons, both philosophical and theological, for denying that there can be a rational case for Christianity the most influential has been the assumption that any argument, to be rational, must conform to the requirements of proof or strict probability. The contention of the present chapter will be that the assumption in question is false. In it I shall endeavour to show that in fields other

than theology we commonly, and justifiably, make use of arguments other than those of proof or strict probability; and that, typically, theological arguments are of this kind (Mitchell 1973: 39).

The notion of ‘strict probability’ is clarified in an endnote, in which Mitchell says that ‘the sense of “probable” involved here is that in which the probability of an event is determined by its relation to a class or classes of similar events’ (Mitchell 1973: 158, Chapter 2, endnote 1). As we saw, Swinburne also believes that the justification of theism does not involve deductive proofs. Moreover, Swinburne certainly agrees with Mitchell that natural theology does not act in the probabilistic argument in the way presented by Mitchell. As we saw in Chapter 7.1 (p.205), Swinburne classifies what Mitchell calls ‘strict probability’ as ‘statistical probability’, which Swinburne does not consider adequate to deal with the confirmatory relationship between evidence and hypothesis (see Swinburne 1973: 12). The extent to which the evidence of evil or of the occurrence of order in the physical world increases or decreases the probability of theism, for example, is a matter of what Swinburne names ‘inductive probability’, which Mitchell simply does not consider in his proposal. In other words, in ruling out the importance of deductive arguments and of statistical probability, Mitchell is not saying anything Swinburne denies.

However, the dismissal of deductive and statistical arguments is only the first stage in Mitchell’s description of a method he believes to be more adequate for dealing with the justification of theism. In his words,

What has been taken to be a series of failures when treated as attempts at purely deductive or inductive argument could well be better understood as contributions to a cumulative case. On this view the theist is urging that traditional Christian theism makes better sense of all the evidence available than does any alternative on offer, and the atheist is contesting the claim (Mitchell 1973: 39-40)

Mitchell contrasts deductive and statistical approaches with one in which the arguments are not treated in isolation but instead reinforce one another. Yet this is

another coincidence between Mitchell and Swinburne's proposals, since Swinburne also aims to build a cumulative case with the aid of Bayes's formula. However, while Swinburne puts the cumulative case for theism in terms of the Bayesian conditionalisation rule (despite not having been very faithful to it in drawing up his final conclusion), Mitchell suggests that mutual argumentative reinforcement should be achieved in an informal way, by means of personal judgement (see Abraham 1985: 117).

The reason Mitchell gives for his stated preference is that theism and atheism are world-views, whose interaction is similar to that between alternative scientific paradigms, as described by Thomas Kuhn in *The Structure of Scientific Revolutions*. In this kind of debate, the parties involved cannot resort to any precise rule to decide which world-view gives a better account of evidence. The most they can do is to use criteria such as consistency, coherence, simplicity, and explanatory power, which do not belong to any particular world-view in particular. As a result, adherents of divergent standpoints can resolve their disagreements through rational means using this kind of inter-paradigm criteria and what Mitchell calls 'trained personal judgement' (see Mitchell 1973: 95).

Now the use of criteria, like those mentioned above, to discern the comparative plausibility of world views such as theism and ontological naturalism is not what distinguishes between Mitchell's and the Bayesian approach. In fact, as Salmon argues in 'Rationality and Objectivity in Science or Tom Kuhn meets Tom Bayes', Bayes's theorem and the axioms of probability calculus also capture in a formal manner the criteria Kuhn suggested for adjudicating among theories (see Salmon 1998: 577). In this way, those criteria can be more precisely formulated and can more usefully guide our perception regarding the coherence of our degrees of

belief and the relative explanatory power of two rival hypotheses vis-à-vis the same set of phenomena. Even the ‘trained judgement’ needed to make possible the inter-paradigmatic discussion can be accounted for in Bayes’s theorem as a resort to a common background knowledge *k* in view of which the rival theories are assessed. In other words, if Salmon’s arguments are correct, not only can the recourse to trained judgement and Kuhnian theory choice criteria be formulated in Bayesian terms, but they can also become clearer and more functional in that form.

In fact, Swinburne also proposes the use of criteria of the type mentioned by Mitchell in the debate between theists and naturalists. The difference is that Swinburne thinks those criteria are universal and impersonal grounds for deciding in a purely *a priori* way the initial probability of the rival positions at issue. For Mitchell, guided by the analogy provided by critical exegesis and historical interpretation, the search for an agreed starting-point is not the way to proceed in the debate about the justification of theism. Instead of looking for a universally agreed initial position, the debate can more successfully progress if the contenders discuss which of the rival accounts ‘makes better sense’ of the available evidence (see Mitchell 1973: 53). Note that this is basically the position I defend regarding prior probabilities (the starting points in Bayesian inductive reasoning), that is, we can allow for the contending parties to start from different degrees of belief, since in the long run the consideration of public evidence and shared criteria may wash out the initial disagreement. Even the main condition for this kind of discussion to proceed successfully, postulated by Mitchell (i.e. that the contenders do not take extreme positions (see Mitchell 1973: 109)), can be accounted for in Bayesian terms. As we saw above, we can only hope for a solution of such debates through rational means if the parties share a considerable amount of background knowledge and do not have too disparate initial

degrees of belief. So, given those conditions, what will determine the possibility of resolving the discussion through argument will be the likelihood inferences, that is, the extent to which the evidence e becomes probable in view of the hypotheses at play (i.e. whether $P(e/h_1.k) < P(e/h_2.k)$) and in relation to its own degree of expectedness (that is, whether $P(e/k) < P(e/h_1.k)$ and if $P(e/k) < P(e/h_2.k)$). In other words, in terms of the approach defended in this thesis, Mitchell is right in denying the importance of discussing the contenders' initial positions, but with this denial does not go the whole idea of applying the Bayesian approach to the justification of theism. Instead the Bayesian account can give a clearer description of the ideas involved in 'defining initial positions in the debate' and 'making sense of evidence', which remain very vague in Mitchell's proposal.

Abraham, however, seems to block the move to interpret soft rationalism in Bayesian terms when he affirms that 'what is vital to realize is that there is no formal calculus into which all the evidence can be fitted and assessed. There is an irreducible element of personal judgement, which weighs up the evidence taken as a whole' (Abraham 1985: 106). In fact, we cannot combine the role of personal judgement with the Bayesian approach if the latter is interpreted in Swinburne's way, since Swinburne intends to deal with probability in a purely objective manner, according to the canons of the logical theory. However, there is no reason to reject the combination of formal inductive reasoning and personal insights in the proposal I am outlining in this chapter. Mitchell's personal judgement is carefully described as being a trained one, that is, one does not deal with the matter in a purely idiosyncratic way, and we can account for that through the intersubjective approach defended here.

According to Abraham, soft rationalism has, like any philosophical position, both virtues and vices as a method of accounting for the justification of religious

belief. Among the virtues he enumerates: 1) it reveals the pattern which this kind of dispute generally makes; 2) it makes more explicit the self-involving nature of religious belief by stressing the crucial place of religious experience as a ground for religious belief; 3) it does justice to the subjective elements that are so important to religious believers, and 4) it makes sense of both the tenacity of religious belief and the certainty that often accompanies it (see Abraham 1985: 109-10).

These positive elements of soft rationalism are also present in the proposal defended in this thesis. First, by acknowledging that the parties involved in the debate about theism start from different backgrounds with regard to religious matters, I aim to give a more realistic picture of what is involved in the debate between theists and atheists. In fact, it is the relevance of religious experience in my proposal – the second point raised by Abraham – that will magnify the difference between the ways that theists and atheists assess the initial probability of theism. In other words, my proposal uses religious experience as an element that influences the prior opinion of the theists engaged in the debate because that is something they partake in even before engaging in debate with non-believers. Third, my approach also allows for subjective elements to enter in the discussion by adopting a theory of probability that is an extension of the subjective theory. In other words, even in the context of rational debate, the approach takes seriously the particular elements of religious faith that an individual shares with his community. Fourth, the intersubjective approach assumes that the assessment of the probability of theism is relative to a particular context of debate. The tenacity and certainty of religious belief is recognised by the approach as legitimate in a context where religious believers are not preoccupied with building bridges between themselves and a non-believing environment. On the other hand, even when it is dealing with ‘people who neither know that God exists nor know that

God does not exist’ – to use Mitchell’s expression (see Mitchell 1973:109) – , the approach permits us to account for the high degree of belief in God assumed by the theist involved in the debate, since until evidence is able to settle the matter, the specific prior assigned by the theist will have a strong influence upon his posterior degree of belief in theism.

Further, the intersubjective approach seems able to give satisfactory answers to the three main deficiencies of soft rationalism pointed out by Abraham. According to Abraham, a first problem with Mitchell’s proposal is the vagueness of the notion of a world-view. A second difficulty is the danger of subjectivism in an account where personal judgement plays such an important role. The third weak point of soft rationalism is the possibility that the training of personal judgement, which is the soft rationalist reply to the second difficulty, is nothing but training in a particular tradition, which will not help with the aim of resolving religious issues through discussion (see Abraham 1985: 110ff).

As regards the first point, the intersubjective approach assumes that belief in ‘the theist hypothesis’ is part of a whole in the sense that it acknowledges its communal character and the crucial place religious experience has in grounding the belief. Moreover, it is able to distinguish a certain element from this whole for analysis, specifically the belief that God exists. In fact the debate between theists and atheists is also the main preconception of Mitchell’s approach (see Mitchell 1973: 59ff). Yet, while in Mitchell it is not clear how the whole picture is related to the point about theism, and there is no indication about how the cumulative case works, in my approach these problems are better managed. First, Bayesian intersubjectivism accounts for the relationship between the justification of theism and the whole set of religious beliefs by stating that in this particular philosophical debate the prior

probability of theism is determined by the religious background of the theist. Second, the different grounds for the theist's belief, which make for a cumulative case, are combined with each other through the rule of conditionalisation. In this way, my approach both deals with a much more specific and manageable element than a world view and is able to relate this specific discussion to that broad standpoint in a clearer way than in Mitchell's proposal.

As to the second and third difficulties in soft rationalism, the intersubjective position also seems to give a better answer than Mitchell's proposal. The accusation of subjectivism is met not only by the characterisation of the debate in terms of intersubjective probability, but also by the idea that the subsequent discussion can be carried out in terms of common terrain between theists and atheists. As a result, and this is related to the third problem of soft rationalism, the crucial point regarding the possibility of resolving the question through personal judgement turns on the extent to which theists and ontological naturalists share a common background knowledge. The larger this intersection the easier it is to obtain an argumentative solution to the question at issue. In my proposal an attempt to enable this condition is made by characterising the group of theists involved in the discussion as those interested in making belief in God intellectually respectable in academic and scientific circles, which in fact excludes those who Abraham classifies as 'fideists'⁹.

In sum, my proposal intends to stand between Swinburne's and Mitchell's approaches, aiming to be an improvement on both which benefits from their good points but avoids their specific problems. The intersubjective Bayesian approach assumes Bayesianism as a good interpretation of the arguments of natural theology as inferences to the best explanation. In this way, it is able to benefit from the rigour and

precision which a formal approach is able to provide. Yet it gives an important place to religious experience, giving to the internal elements of religious practice a more important and realistic place than in Swinburne's proposal. In doing so, the intersubjective approach claims not to fall into subjectivism, since the particularity of the initial degree of belief in theism is supplemented by the objective elements of public evidence, formal reasoning and (to a certain extent) common background knowledge.

Certainly the proposal offered is also open to many criticisms. Perhaps the main one is that it is still too green and schematic. In fact all I could hope to achieve in this chapter, as I repeatedly observed in many occasions, was simply to outline a programme. Many challenges open up on the horizon, since the task of building up a positive account is much more difficult than the task of criticising other accounts. I will be content if I was at least able to show that my account is promising.

⁹ Recall that I do not agree that Plantinga's position is fideistic.

Summary and Conclusion

The aim of this thesis was to present a way of using Bayes's theorem and religious experience in the justification of theism that were an alternative to that proposed by Richard Swinburne. In order to attain this goal, I described and analysed Swinburne's approach, criticised the flaws found in it and advanced a different means of dealing with these two main elements of his epistemology of the belief in God. These tasks were accomplished in eight chapters, and in what follows I will summarise the main points that I believe are the thesis' contributions to the critical interpretation of Swinburne's philosophy and to the epistemology of theistic belief.

Despite being largely a description of Swinburne's approach, Chapter 1 is important because it establishes the link between the Bayesian methodology adopted by him and the target-public he aims at, a consideration that is particularly relevant to the proposal that will be formulated in the end. In addition, that initial account also emphasises the crucial role played by religious experience in Swinburne's epistemology of theism. Moreover, I adopted William Abraham's classification of Swinburne's methodology – called 'hard rationalism' – in order to better understand Swinburne's proposal and prepare for the eventual formulation of my alternative.

Chapter 2 consists of a review of the critics of Swinburne's methodology. In this review, I briefly advanced the main idea defended in this thesis, i.e. that the rejection of Swinburne's Bayesian approach to the epistemology of theism does not mean denying any place to this methodology in the justification of theistic belief as such. I argued that the existing reasons for a complete rejection of the Bayesian approach in the area were flawed, and that even a criticism of Swinburne's way of dealing with it would only be successful after a thorough analysis of his principle of

simplicity, which is the distinctive element in his Bayesian discussion of the rationality of theism.

Chapter 3 was then devoted to the critical discussion of Swinburne's simplicity principle. After reviewing important authors on this matter, such as Mario Bunge, Rom Harré and Mary Hesse, I presented Swinburne's defence of the epistemological importance of simplicity in light of his new developments in the area, put forward in *Simplicity as Evidence of Truth* (1997) and *Epistemic Justification* (2001). In these two works, Swinburne considerably improves his theory by making the concept of simplicity more precise, by clarifying its application in scientific reasoning, and by presenting new arguments for the idea that simplicity is an *a priori* indication of the truth of a theory.

Although the improvements regarding earlier developments were significant, I held that there were still too many problems with the principle of simplicity to permit it to have the prominent role it enjoys in Swinburne's epistemology of theism. As to the definition of simplicity, even after the exclusion of notions like 'naturalness', and 'neatness', and the concentration on the quantitative aspects of simplicity, the concept still remains with too many meanings, which is a potential source of confusion. In addition, the stripped-down notion of simplicity in Swinburne (1997) and (2001) excludes elements relied on in *The Existence of God* to give theism high intrinsic probability.

As to the application of simplicity to the task of selecting theories, I pointed to two problems in Swinburne's proposal. First, being a multifaceted concept, the employment of this criterion to select the most probable theory will produce conflicting results, for different theories are said to be simple according to different facets. This possibility diminishes considerably the room for the ascription of priors

to be made in strictly universal and impersonal terms. Indeed, Swinburne recognises the problem, but claims that potential clashes are solved on the basis of the consensus existing in the scientific community (see Swinburne 1997:30). However, this indicates that the members of the scientific community have in their background knowledge more than tautologies and empirical data, in contrast to what is implied by Swinburne's account (see Swinburne 1991: 53 and 2001a:93). According to Swinburne, scientists should know *a priori* the criteria for distinguishing which is the most relevant concept of simplicity in a given concrete situation of theory choice. This point allowed me to argue for an expanded notion of background knowledge, which also includes inference rules, mathematical concepts, heuristic values and inductive criteria, which are neither tautologies nor empirical claims. As a result, far from being universally applicable and totally impersonal, the principle of simplicity would only make sense as a criterion for theory choice in a particular context and relative to a definite community of researchers, which have in common a certain background knowledge that includes elements such as the principle of simplicity itself. Second, the application of the simplicity principle was neither as direct nor totally impersonal as Swinburne intended. In fact, simplicity is a matter of degree, and it only represents a quality in a theory if it is present in it at the right level. Again, the definition of what is the right level depends on the context and on the consensus of a particular community of researchers. In other words, the highest degree of simplicity (assuming we can define it unambiguously) does not mean the highest *a priori* prior probability. A theory can be excessively simple, and if it is simplistic, its prior should be correspondingly low according to this criterion, even before we consider any empirical evidence.

Lastly, I argued that the justification provided by Swinburne for the epistemological value of simplicity was also highly disputable. According to Swinburne, one of the reasons why simplicity is an indication of the truth of a hypothesis is that, among the criteria for hypothesis selection, simplicity would be the most important for defining the prior probability of large-scale theories. Swinburne postulates three such criteria: scope, fitness with background knowledge and simplicity. As to the first, he says we should prefer simplicity because this generally outweighs scope in determining prior probability (see Swinburne 1991: 106). In fact, this priority of simplicity over scope is rather doubtful as a claim about the history of science, but even if Swinburne is right on this point, what will settle the conflict between the evaluations on these two criteria does not seem to be any *a priori* principle, but the background knowledge shared by the relevant research community. In other words, the decision to invest in a hypothesis despite its broad scope and because it is simpler than its competitors will be based on a trained judgement, that is, one that conforms more closely to the relevant background knowledge.

Swinburne's dismissal of the criterion of fitness with background knowledge in view of simplicity is also controversial. On the one hand, he argues that it does not apply to large-scale theories like theism, because background knowledge includes only empirical information (see Swinburne 2001a: 91 and 1991: 53), and the theistic hypothesis is intended to explain all empirical phenomena. However, as I held above, there is no reason to exclude from background knowledge non-empirical information such as inductive standards, logical rules, mathematical laws and heuristic values. On the other hand, Swinburne claims that the criterion of background knowledge boils down to the criteria of yielding the data and of simplicity since when we say a theory is plausible because it fits with what we know we mean it does so in the simplest way

(see Swinburne 1997: 41). Yet, even if we may include the notion of simplicity to spell out the operation of the criterion of background knowledge, this is not the only concept involved, and not even the most central one. Simplicity may express the way a hypothesis h relates to a body of established information so that we evaluate h as plausible, but it does not say anything about the nature of the criterion of fitness with background knowledge. In other words, the criterion of fitness cannot be reduced to that of simplicity because its definition does not give central place to the idea of being simple, but rather to a theory's being logically consistent with an accepted body of information.

As I held in Chapter 3.3 (pp.83f.) there is reason to believe that it is the criterion of simplicity that can be reduced to that of fitness with background knowledge. On the one hand, the notion of simplicity can only be understood in relation to a context. In other words, nothing is simple in itself, but only in view of a given property or facet that can only be evident in the context of a particular discussion. On the other hand, the application of the criterion of simplicity requires the notion of background knowledge as well.

Moreover, the very rationale used by Swinburne to justify the simplicity principle is doubtful in view of the probability calculus. For Swinburne, we need the simplicity principle to select the most plausible theories from a potentially infinite set of competing alternatives (see Swinburne 1991: 55). However, as we saw in Chapter 3.4 (pp.94f.), when considering an infinite number of hypotheses, we can only ascribe prior probability zero according to the probability calculus. Even if we allow a non-standard mathematical analysis of the problem, which deals with the question in terms of infinitesimal numbers, a serious difficulty remains because, in concrete processes of theory choice, one does not consider an infinite number of exclusive alternatives,

but only those actually believed relevant by the research community concerned. In other words, Swinburne's fundamental reason for postulating the principle of simplicity is based on too artificial and implausible a scenario for the way theory choice happens in scientific contexts.

Moreover, Swinburne is not clear about the way simplicity factors into Bayes's theorem. He admits the principle of simplicity is not analytic, but synthetic *a priori* (Swinburne 1997: 50-1). Further, he asserts at various points that in the estimate of the prior probability of theism we should leave all empirical data to the evidence and consider in background knowledge *k* only tautologies (see, for example, Swinburne 1991: 65, 68, 90, 107, 129). This means that in Swinburne's account there is no place to factor simplicity into Bayes's theorem at all, since it is neither a tautology nor an empirical truth.

After dealing with a crucial point of Swinburne's application of Bayes's theorem to the justification of theistic belief, I devoted the three following chapters to religious experience, the other main subject of his enterprise. Chapter 4 was, in essence, a description of Swinburne's approach to religious experience and an analysis of the role it has in the overall argument in favour of the belief that there is a God. My claim there was that the fact that Swinburne does not use the Bayesian analysis as he does in the other arguments does not mean an abandonment of that method, as many of his interpreters view it. Instead, religious experience was taken as another inductive argument, but its character and the place reserved for it by Swinburne required some groundwork to make it function as such. The principles of credulity and testimony were necessary to make the hypothesis of theism the best explanation for religious experience, making it able in fact to tip the balance of

probability in favour of theism, as Swinburne holds in the final pages of *The Existence of God*.

However, it is also possible to detect considerable problems in Swinburne's handling of religious experience. As I expounded at the end of Chapter 4 (pp.129f.), if we follow his own calculations, the cumulative evidence provided by the other arguments in favour of theism already seemed sufficiently strong to raise the posterior probability of theism well above 50%, making the religious experience argument completely redundant. Moreover, there were important difficulties with religious experience as a compelling inductive argument, the very thing Swinburne intended it to be. The arguments for not considering religious experience as a basis for a universally acceptable inductive argument were presented in Chapter 5. The main contention was that the most Swinburne was able to achieve was a defensive position, according to which one could take religious experience at face value given some inductive principles. However, once we saw that perceptions require a conceptual background to be identified and explained, and once the background assumed in religious perception is seen to be not as universal as that which is required for sense perception, I concluded that, contra Swinburne, scepticism regarding religious experience is not as irrational as scepticism about sense perception.

In Chapter 6, I discussed William Alston's alternative use of the phenomenon of religious experience in the justification of theistic belief, and compared it with Swinburne's attempt, which is something not very well explored in the literature. Instead of employing it in an inductive argument, Alston postulated that religious experience provides an immediate basic belief that there is a God. However, I interpreted Alston's approach as confirming a *prima facie* belief in God only in those participants who use socially established means of forming beliefs in a particular

religion. Consequently, while Alston's approach to religious experience looks broadly immune to most criticisms addressed against Swinburne's attempt, the result is, in fact, a much weaker and particular justification for believing that there is a God. Taking Alston's position, that religious experience should be viewed as providing initial grounds for theism I held that we could re-use his ideas in a Bayesian methodology of religious epistemology, providing it is combined with other means of justifying theistic belief. In order to do so, however, I needed a theory of probability different to that defended by Swinburne.

Chapter 7 was then dedicated to discussing in great depth Swinburne's theory of probability. His concept of probability is pluralistic and allows the attribution of probability values to a hypothesis in view of evidence, normally called 'epistemic probability'. Given the aims of this thesis, I concentrated on the discussion of the status of epistemic probability, which Swinburne prefers to name 'inductive'. Swinburne adopts the logical theory of probability as a means of assigning a prior probability value to a theory in Bayes's theorem. In his version of this theory of probability, the initial degree of belief with which a proposition is to be held should be determined by *a priori* and impersonal criteria, known to a logically omniscient being, and of which we have a limited comprehension. The principle of simplicity, extensively discussed in Chapter 3, plays a major role in this theory, since it is the main criterion for attributing a probability value to a hypothesis before the consideration of evidence. In addition to the criticisms I formulated in Chapter 3, new considerations stemming from the subjective theory of probability were brought in to argue that the logical theory fails because it cannot live up to its promises. In other words, as de Finetti, Collin Howson and other representatives of subjective Bayesianism assert, logicians deny any place to informal and personal judgement in

probability estimation, only to resort to them at every turn. However, I did find problems in the subjective theory: its difficulty in establishing a relationship between probability and truth, and its exclusively individualistic account of probability estimation. I therefore defended the intersubjective theory of probability which, although an extension of the subjective theory, incorporates the missing elements pointed to by the critics of subjectivism.

In the intersubjective approach to epistemic probability, the degree of belief is determined by the background knowledge shared by a group of individuals who share not only a common set of concepts but also a common objective. In this way, their prior probability attribution, for example, is not a matter of the idiosyncratic views of an individual, but of a consensus shared by a select group, such as the scientific community or the religious believers who are interested in justifying their belief that God exists. Following the suggestion of Gillies, the measure of this degree of belief is given by the amount of money the group agrees to bet on the hypothesis in a psychological experiment. This approach also allows for the possibility that more than one prior probability assignment may be made, given different groups with different backgrounds.

In the last chapter, I outlined an alternative proposal for applying Bayes's theorem and religious experience to the justification of theism on the intersubjective approach. The idea is that religious experience should be a factor in the background knowledge of one of the main parties involved in the question of justification of theistic belief. Since the approach permits more than one estimate of prior probability to the hypothesis of theism, it allows us to take seriously the fact that theists and naturalists adopt different starting points in the debate or, in Alston's terms, that they belong to different doxastic practices. If we take the justification of theism as a

philosophical question and define the group of theists as those who share the objective of showing that theism is intellectually respectable to scientific and academic circles, then we have the outcome that the two main parties involved will share a significant amount of background knowledge. It is the sharing of this common ground that permits us to think that, despite their initially divergent prior probabilities, they can move to a rational resolution of the point at issue. In other words, it is because, and to the extent that, they agree about a set of evidence and inferential rules that the theist and the atheist can overcome their initial disagreement.

Put this way, the intersubjective Bayesian approach could be placed in an intermediate position between Swinburne's 'hard rationalism' and Mitchell's 'soft rationalism', to use Abraham's terminology. It agrees with Swinburne that the probability calculus can help to make the arguments more rigorous and coherent, and to clarify notions like 'making better sense' and 'cumulative case', which are very vague in Mitchell's account. On the other hand, it allows for different starting points to theists and naturalists, recognising the crucial role religious experience has for the theistic side, and accepts that this discussion involves both *a priori* criteria and (inter)personal judgement. In addition, the intersubjective approach is able to provide a concept of rationality for evaluating the positions involved. In Bayesian terms they will be considered rational if they are coherent in their probability estimations, if they update their prior probabilities in view of evidence according to the rule of conditionalisation and if their final degree of belief is proportionate with the posterior probability obtained in the course of the debate.

I do recognise that the intersubjective Bayesian approach to the epistemology of theism outlined above is still very programmatic, and that it contains many points deserving clarification. At least, I hope to have shown that it is an alternative that

overcomes most of the problems that appear in Swinburne's position, and thus that it deserves further development as a methodology in religious epistemology. In other words, if we are to use Bayes's theorem in this discussion, then the suggestions I have made here should be added to the significant contribution Richard Swinburne has made to the area.

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